VOLUME 17 PART 2

NORTH AMERICAN FLORA

(POALES)

POACEAE (pars)

GEORGE VALENTINE NASH

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ANNOUNCEMENT

The NORTH AMERICAN FLORA is designed to present in one work descriptions of all plants growing, independent of cultivation, in North America, here taken to include Greenland, Central America, the Republic of Panama, and the West Indies, except Trinidad, Tobago, and Curaçao and other islands off the north coast of Venezuela, whose flora is essentially South American.

The work will be published in parts at irregular intervals, by the New York Botanical Garden, through the aid of the income of the David Lydig Fund bequeathed by Charles P. Daly.

It is planned to issue parts as rapidly as they can be prepared, the extent of the work making it possible to commence publication at any number of points. The completed work will form a series of volumes with the following sequence:

Volume 1. Mycetozoa, Schizophyta, Diatomaceae.

Volumes 2 to 10. Fungi.

Volumes 11 to 13. Algae.

Volumes 14 and 15. Bryophyta.

Volume 16. Pteridophyta and Gymnospermae.

Volumes 17 to 19. Monocotyledones.

Volumes 20 to 32. Dicotyledones.

The preparation of the work has been referred by the Scientific Directors of the Garden to a committee consisting of Dr. N. L. Britton, Dr. W. A. Murrill, and Dr. J. H. Barnhart.

Professor George F. Atkinson, of Cornell University; Professor John M. Coulter, of the University of Chicago; Mr. Frederick V. Coville, of the United States Department of Agriculture; Professor Edward L. Greene, of the United States National Museum; Professor Byron D. Halsted, of Rutgers College; and Professor William Trelease, of the Missouri Botanical Garden, have consented to act as an advisory committee.

Each author will be wholly responsible for his own contributions, being restricted only by the general style adopted for the work, which must vary somewhat in the treatment of diverse groups.

The subscription price is fixed at $1.50 for each part; it is expected that four or five parts will be required for each volume. A limited number of separate parts will be sold at $2.00 each. Address:

THE NEW YORK BOTANICAL GARDEN
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NEW YORK CITY

19. **ARTHRAXON** Beauv. Agrost. 111. 1812.

Pleuroplitis Trin. Fund. Agrost. 174. 1820.
Lucaea Kunth, Rév. Gram. 489. 1831.
Batratherum Nees, Edinb. New Phil. Jour. 18: 180. 1835.
Lasiolytrum Steud. Flora 29: 18. 1846.
Psilopogon Hochst.; A. Rich. Tent. Fl. Abyss. 2: 447. 1852. Not *Psilopogon* Hochst. 1846.
Alecloridia A. Rich. Tent. Fl. Abyss. 2: 447. 1852.

Usually low slender creeping grasses, with broad cordate-clasping leaf-blades, and with racemes or spikes aggregated at the summit of the stem or its branches. Racemes or spikes 2–many, unequal, the rachis often somewhat flexuous, the internodes filiform. Spikelets usually in pairs at each node of the rachis, one pedicellate, the other sessile. Sessile spikelet lanceolate or linear, often a little oblique, 1-flowered, the flower hermaphrodite; first scale with the margins not or but little folded; second scale keeled, sometimes with a small mucro; third scale hyaline, empty; fourth scale hyaline, entire or slightly 2-toothed, with usually a slender perfect or rarely imperfect awn arising from the back above the base; palet minute or wanting. Stamens 2 or 3. Stigmas longer than the styles, exserted near the base of the spikelet, rarely included. Grain linear, somewhat terete. Pedicellate spikelet awnless, usually empty, rarely with a staminate flower, or entirely wanting.

Type species, *Arthraxon ciliaris* Beauv.

1. **Arthraxon Quartinianus** (A. Rich.) Nash.

Alectoridia Quartiniana A. Rich. Tent. Fl. Abyss. 2: 448. 1852.
Arthraxon ciliaris Quartinianus Hack. in DC. Monog. Phan. 6: 356. 1889.

Stems slender, barbed at the nodes, otherwise glabrous, finally decumbent at the base and rooting at the nodes, the upright portions up to 3 dm. long; leaf-sheaths glabrous or papillose-pilose; blades 2–5 cm. long and 1 cm. wide or less, ovate-lanceolate, acuminate, cordate and clasping at the base, more or less pilose on both surfaces; spikes few to many, 2–3 cm. long, the internodes pilose with long erect hairs; spikelets 3–5 mm. long, the first scale usually hispid toward the apex.

TYPE LOCALITY: Near Adowa, Abyssinia.
DISTRIBUTION: Introduced into Jamaica and Guadeloupe. Native of Africa and Asia.
ILLUSTRATION: A. Rich. Tent. Fl. Abyss. *pl. 99*.

20. **DIECTOMIS** H. & B.; Beauv. Agrost. 132, 150, 160. 1812.

Homoeatherum Nees; H. & A. Bot. Beech. Voy. 239. 1836.

Perennial grasses with flat or complanate leaf-blades, and 1-several spike-like racemes borne at the apex of the stem and its branches. Rachis of many internodes which, when separated, are crowned with an irregular cup-shaped toothed appendage. Spikelets in pairs. Sessile spikelet much compressed laterally; first scale 2-keeled, infolded on the margins; second scale much broader than the first, bearing below the apex a long imperfect awn; third scale hyaline, infolded on the margins; fourth scale membranous, 2-toothed, a stout perfect awn arising from between the teeth; palet shorter than the scale, subtending a perfect flower. Stamens 3. Styles short, as long as the stigmas, which are exserted below the middle of the spikelet. Pedicellate spikelet flowerless, broad, twice as long as and differing much in form from the sessile spikelet and concealing it, the first scale awned.

Type species, *Andropogon fastigiatus* Sw.

Raceme 1; intercarinal space of the first scale of the sessile spikelet pilose above. 1. *D. fastigiata*.
Racemes 2–4; intercarinal space of the first scale of the sessile spikelet glabrous. 2. *D. laxa*.

1. **Diectomis fastigiata** (Sw.) Beauv. Agrost. 150, 160. 1812.

Andropogon fastigiatus Sw. Prodr. 26. 1788.
Pollinia fastigiata Spreng. Pugill. 2: 13. 1815.
Andropogon Hochstetteri Steud. Syn. Gram. 384. 1854.
Heteropogon Hochstetteri Schweinf. Beitr. Fl. Aeth. 310. 1867.
Sorgum fastigiatum Kuntze, Rev. Gen. 791. 1891.

Stems up to 1 m. tall, branched, the branches in 1's–3's; leaf-sheaths loose, keeled; ligules 5–10 mm. long, broader than the leaf-blades; blades of the innovations up to 3 dm. long, 1–4

mm. wide, glabrous, or sparsely ciliate at the base, rough on both surfaces; spike-like racemes 4–8 cm. long, the internodes shorter than the sessile spikelets, ciliate on the margins with white spreading hairs; sessile spikelet 4–5 mm. long, the first scale with an obtuse callus nearly 1 mm. long, 2-nerved in addition to the hispidulous keels, the center of the upper part pilose with long hairs, the second scale obovate-cuneate, the keel long-ciliate, the awn 3–4 times as long as the scale, the fourth scale about one half as long as the second, ciliolate, elliptic, the awn 3.5–4.5 mm. long, glabrous, the dark-brown straight or indistinctly geniculate column about one half as long as the yellow subula; pedicellate spikelet with the first scale herbaceous, curved-obovate, flat, 15-nerved or more, bearing a straight awn as long as itself, the second scale half as long as the first, membranous, bearing a short awn, the fourth scale long-ciliate, muticous.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Tropics.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 64.*

2. **Diectomis laxa** Nees, Agrost. Bras. 340. 1829.

Diectomis angustata J. Presl, in Presl, Rel. Haenk. 1: 333. 1830.
Andropogon apricus Trin. Mém. Acad. St. Petersb. VI. 4^2: 83. 1836.
Andropogon angustatus Steud. Syn. Gram. 370. 1854.
Andropogon Lindenii Steud. Syn. Gram. 389. 1854.
Sorgum laxum Kuntze, Rev. Gen. 790. 1891.

Stems erect, up to 1 m. tall, slender, branching above; leaf-sheaths glabrous; ligules 1–2.5 mm. long; blades 1–3 dm. long, 1–2 mm. broad; racemes in 2's–4's, 1.5–2.5 cm. long, the common peduncle usually included in the spathe, the rachis-internodes and pedicels broadly cuneate, ciliate; sessile spikelet 5 mm. long, oblong, the first scale linear, truncate, the margins broadly infolded, the narrow intercarinal space glabrous, 2–4-nerved, the silky-barbed callus 1 mm. long, the second scale keeled, compressed, obovate-oblong, with a straight awn 2–3 times its length arising from the entire apex, the fourth scale gibbous on the back, 3-nerved, ciliate, bearing below the minutely 2-toothed apex an awn 3–4 cm. long, the hispidulous column geniculate above the middle and shorter than the subula; pedicellate spikelet with the first scale oblong, long-ciliate on the keel, 7-nerved, bearing an awn twice as long as itself, the second scale 3-nerved, shortly awned or awnless.

TYPE LOCALITY: In sunny mountainous places, Serra dos dois Irmãos, Piauhy, Brazil.
DISTRIBUTION: Mexico to Costa Rica; also in Colombia, Venezuela, and Brazil.

21. **SCHIZACHYRIUM** Nees, Agrost. Bras. 331. 1829.

Heterochloa Desv. Opusc. 66. 1831.

Annual or perennial grasses, tufted or from rootstocks, with flat or involute leaf-blades, and spike-like racemes, singly disposed, terminating the stem or its branches. Internodes of the articulate rachis cup-shaped or crowned at the apex with a toothed or bifid appendage, the callus at the base barbed. Spikelets in pairs at each node of the frequently hairy rachis, one sessile, the other pedicellate. Sessile spikelet dorsally compressed, 1-flowered, the flower perfect; first scale infolded on the margins, 2-keeled; second scale awnless or rarely with a short bristle, usually 1-nerved, or sometimes nerveless, keeled; third scale with the margins infolded, 2-nerved or nerveless; fourth scale usually 2-cleft at the apex, often almost to the base, bearing a perfect usually geniculate awn, rarely awnless, the spiral column usually straight, the subula sometimes loosely contorted at the base; palet usually wanting. Pedicellate spikelet flowerless, of 1 or 2 scales, rarely of 4 scales and bearing a staminate flower, or wanting. Stamens usually 3, very rarely 1 or 2. Styles distinct. Stigmas plumose, sometimes twice as long as the styles, exserted below the middle of the spikelet.

Type species, *Andropogon brevifolius* Sw.

Annuals.

First scale of the sessile spikelet glabrous; internodes of the rachis glabrous or merely hispidulous.	
Spikelets 3.5–4 mm. long; leaf-blades short, obtuse; stems prostrate.	1. *S. brevifolium.*
Spikelets 4–5 mm. long; leaf-blades long, acute; stems erect.	2. *S. Gaumeri.*
First scale of the sessile spikelet white-villous on the back; internodes of the rachis densely clothed with white hairs on the back and margins.	3. *S. malacostachyum.*

Perennials.
Leaf-blades flat, or sometimes complanate when dry, never terete nor involute, prominently keeled on the lower surface.
First scale of the sessile spikelet densely pubescent.
Sessile spikelet 4–5 mm. long. 4. *S. Myosurus.*
Sessile spikelet 7–9 mm. long.
Internodes and pedicels glabrous on the back. 5. *S. semiglabrum.*
Internodes and pedicels hirsute on the back with long erect hairs. 6. *S. domingense.*
First scale of the sessile spikelet glabrous.
Internodes of the rachis glabrous, or rarely with a few hairs on one side.
Fourth scale of the sessile spikelet entire, awnless; pedicel usually glabrous. 7. *S. Salzmanni.*
Fourth scale of the sessile spikelet deeply 2-cleft, bearing a perfect awn; pedicel ciliate with long hairs.
Sessile spikelet 4 mm. long, the fourth scale not cleft below the middle, the awn commonly less than 1 cm. long. 8. *S. tenerum.*
Sessile spikelet 5 mm. long or more, the fourth scale cleft nearly to the base, the awn more than 1 cm. long.
Pedicellate spikelet about 3 mm. long, of a single scale, empty, the pedicel ciliate on the outer margin, rarely glabrous. 9. *S. semiberbe.*
Pedicellate spikelet 5–8 mm. long, of several scales, usually enclosing a staminate flower, the pedicel with he outer margin long-hairy at the apex. 10. *S. cirratum.*
Internodes of the rachis and the pedicels ciliate with long hairs.
Fourth scale of the sessile spikelet 2-cleft nearly to the base, the third scale not colored.
Sessile spikelet about 7 mm. long, the column of the awn included or barely exserted from the scales; stems commonly sparingly branched. 11. *S. Schottii.*
Sessile spikelet 3.5–5 mm. long, the column of the awn usually much exserted; stems commonly much branched. 12. *S. condensatum.*
Fourth scale of the sessile spikelet entire or shortly 2-toothed, the third scale usually colored.
Stems tufted; no long rootstocks nor stolons.
Hairs more than twice the length of the internodes. 13. *S. Muelleri.*
Hairs usually much shorter than the internodes.
Hairs at the apex of the internodes short, 1–3 mm. long; plant usually green or purplish, rarely glaucous.
Hairs grayish-white, rather sparse, the spikelets plainly visible through them.
Sessile spikelet 5–7 mm. long, rarely longer. 14. *S. scoparium.*
Sessile spikelet 10 mm. long. 15. *S. acuminatum.*
Hairs on the internodes and pedicels silvery-white, dense, nearly concealing the spikelets. 16. *S. neo-mexicanum.*
Hairs at the apex of the internodes 4–5 mm. long; plant glaucous, the leaf-sheaths much compressed. 17. *S. littorale.*
Stems not tufted, with long creeping rootstocks and long extra-vaginal innovations.
Pedicellate spikelet of 4 scales, with a staminate flower; leaf-blades spreading; plant glaucous. 18. *S. maritimum.*
Pedicellate spikelet of 1 or 2 scales, empty; leaf-blades erect.
Sessile spikelet 6–7 mm. long; pedicellate spikelet of a single scale which has a single short awn. 19. *S. stoloniferum.*
Sessile spikelet 9–10 mm. long; pedicellate spikelet of 2 scales, the first scale 3-awned. 20. *S. triaristatum.*
Leaf-blades terete or involute, not keeled on the lower surface, the upper surface with a broad white median band of spongy tissue.
Internodes of the rachis and the pedicels ciliate on the margins; first scale of the sessile spikelet few-nerved.
Spike-like racemes long-hairy, the spikelets nearly concealed in the hairs; fourth scale of the sessile spikelet 2-cleft for one quarter to one half its length, the column of the awn much exserted, tightly spiral. 21. *S. gracile.*
Spike-like racemes sparsely hairy, the spikelets plainly evident; fourth scale of the sessile spikelet entire or minutely 2-toothed, the loosely spiral column not exserted. 22. *S. cubense.*
Internodes of the rachis glabrous, the pedicels with but a few hairs near the apex; first scale of the sessile spikelet 11–13-nerved. 23. *S. multinervosum.*

1. Schizachyrium brevifolium (Sw.) Nees; Miq. Fl. Ind. Bat. 3: 495. 1855.

Andropogon brevifolius Sw. Prodr. 26. 1788.
Andropogon obtusifolius Poir. in Lam. Encyc. Suppl. 1: 583. 1810.

Pollinia vaginata Spreng. Pugill. 2: 11. 1815.
Pollinia brevifolia Spreng. Pugill. 2: 13. 1815.
Andropogon tenellus J. Presl, in Presl, Rel. Haenk. 1: 335. 1830.
Andropogon floridus Trin. Mém. Acad. St. Petersb. VI. 2: 265. 1832.
Andropogon debilis Kunth, Enum. 1: 488. 1833.
Sorgum brevifolium Kuntze, Rev. Gen. 791. 1891.

A low spreading annual, with branching decumbent stems, and short obtuse leaf-blades. Stems up to 5 dm. long, slender, somewhat flattened, smooth and glabrous, finally prostrate at the base; leaf-sheaths compressed, the lower ones much shorter than the internodes; blades linear, usually obtuse, often folded, glabrous, those on the main stem up to 5 cm. long and 5 mm. wide; spike-like racemes 1.5–3 cm. long, usually included at the base, the internodes of the rachis and the pedicels hispidulous on the angles; sessile spikelet 3.5–4 mm. long, the first scale lanceolate, acuminate, rough, hispidulous on the keels, the fourth scale cleft nearly to the base, the awn 8–15 mm. long, geniculate, the column spiral, from a little shorter than to one half the length of the subula; pedicellate spikelet usually reduced to a single scale 1–1.5 mm. long and bearing an awn 4–5 mm. long.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Tropical America; also in tropical and subtropical regions elsewhere.
ILLUSTRATION: Kunth, Rév. Gram. *pl. 196*.

2. **Schizachyrium Gaumeri** Nash, sp. nov.

A tufted annual with erect branching stems. Stems 3–4 dm. tall, smooth and glabrous, somewhat compressed; leaf-sheaths compressed, keeled, the lower ones overlapping; ligules scarious, ciliolate, 1.5–2 mm. long; blades flat, 3–12 cm. long, 3–4 mm. wide, acuminate; spike-like racemes 3–5 cm. long, usually included at the base, the internodes of the straight rachis glabrous, with a broad deeply 2-toothed hyaline apex, the pedicels sparsely long-hairy on the outer margin; sessile spikelet 4–5 mm. long, the first scale lanceolate, papillose-roughened, hispidulous on the keels, acute at the usually bifid apex, the second scale a little shorter, acute, 1-nerved, the keel hispidulous, the third scale about as long as the second, ciliate, the fourth scale 2-cleft almost to the base, ciliate, the awn 12–15 mm. long, geniculate, the tightly spiral column much exserted, equaling or a little shorter than the subula; pedicellate spikelet usually reduced to a single scale, 2–3 mm. long, with an awn 3–4 mm. long.

Type collected at Izamal, Yucatan, *G. F. Gaumer 1037* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Schizachyrium malacostachyum** (J. Presl) Nash.

Andropogon malacostachyus J. Presl, in Presl, Rel. Haenk. 1: 337. 1830.
Sorgum malacostachyum Kuntze, Rev. Gen. 792. 1891.

Stems erect, up to 2.5 dm. tall, glabrous, branching, the branches short, simple, single or in pairs; leaf-blades up to 5 cm. long, 3–4 mm. wide, glabrous, smooth, except on the margins and keel; spike-like racemes 3–4 cm. long, of 8–12 internodes, so densely clothed with long white hairs that the spikelets are almost concealed, often entirely enveloped by the brown spathe, the internodes shorter than the sessile spikelets, with the margins and back densely clothed with long white hairs, except on the lower third, the pedicels shorter than the sessile spikelets; sessile spikelet about 5 mm. long, linear-oblong, the first scale white-villous on the back, the margins broadly infolded, obscurely 2-nerved in addition to the keels, the second scale 1-nerved, the fourth scale 2-cleft almost to the base, the awn about 1.5 cm. long, the column deep-brown, shortly exserted, about one third shorter than the subula which is somewhat contorted at the brownish base; pedicellate spikelet of 1 scale, 2–2.5 mm. long, lanceolate-subulate, bearing an awn about 5 mm. long.

TYPE LOCALITY: Acapulco, Guerrero.
DISTRIBUTION: Guerrero to Costa Rica.

4. **Schizachyrium Myosurus** (J. Presl) Nees, Linnaea **19**: 695. 1847.

Andropogon Myosurus J. Presl, in Presl, Rel. Haenk. 1: 337. 1830.
Sorgum Myosurus Kuntze, Rev. Gen. 792. 1891.

Stems slender, 7–10 dm. tall, branching, the branches in 2's–4's, simple or branched; leaf-sheaths glabrous, compressed, keeled; blades linear, acute, up to 12 cm. long, 3–4 mm.

wide, glabrous, smooth beneath, rough on the upper surface and on the margins; spathes 3.5–4 cm. long; spike-like racemes 4–6 cm. long, slender, the rachis straight, the internodes equaling the sessile spikelets, about 1 mm. broad at the apex, the pedicels a little shorter than the internodes; sessile spikelet 4–5 mm. long, linear-oblong, the first scale coriaceous, obsoletely 2-nerved in addition to the keels, densely clothed on the back, except the upper quarter, with white spreading hairs, the second scale equaling the first, membranous, acute, glabrous, the third and fourth also glabrous, the fourth bearing an awn 10–12 mm. long, barely exserted from the scales and equaling the subula; pedicellate spikelet about 2 mm. long, of 2 scales, the first scale with an awn about as long as itself.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Mexico.
ILLUSTRATION: Kunth, Rév. Gram. *pl. 199.*

5. **Schizachyrium semiglabrum** Nash, sp. nov.

A tufted perennial with intravaginal innovations. Stems 6–8 dm. tall, slender, smooth and glabrous, often glaucous, somewhat compressed, especially near the nodes, sparingly branched, the branches single from the upper axils; spike-like racemes 5–7 cm. long, straight, the rachis not flexuous, the internodes and the pedicels long-ciliate on one margin with ascending hairs, the pedicels long-ciliate also on the outer margin near the apex, otherwise glabrous; sessile spikelet 8–9 mm. long and about 1 mm. wide, lanceolate, the first scale about 6-nerved, including the two hispidulous keels, rough toward the apex, hirsute below with long ascending hairs, the second scale rough below, hispidulous on the keel, acuminate, the third and fourth scales claret-colored, the fourth ciliate on the margins and deeply 2-toothed at the apex, bearing an awn about 1.5 cm. long, the column tightly spiral, brown, the subula hispidulous, purplish, slightly twisted below.

Type collected in the Sierra Madre, near Colonia Garcia, Chihuahua, Mexico, September 19, 1899, *C. H. T. Townsend & C. M. Barber 335* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

6. **Schizachyrium domingense** (Spreng.) Nash.

Streptachne domingensis Spreng.; Schultes, in R. & S. Syst. Veg. Mant. 2: 188. 1824.
Aristida domingensis Kunth, Rév. Gram. 62. 1829.
Schizachyrium hirtiflorum Nees, Agrost. Bras. 334. 1829.
Andropogon hirtiflorus Kunth, Rév. Gram. 569. 1832.
Andropogon oligostachyus Chapm. Fl. S. U. S. 581. 1860.
Andropogon malacostachyus Fourn. Mex. Pl. Gram. 62. 1881. Not *A. malacostachyus* J. Presl, 1830.
Andropogon feensis Fourn. Mex. Pl. Gram. 62. 1881.
Andropogon hirtiflorus oligostachyus Hack. in DC. Monog. Phan. 6: 372. 1889.
Andropogon hirtiflorus feensis Hack. in DC. Monog. Phan. 6: 372. 1889.
Sorgum hirtiflorum Kuntze, Rev. Gen. 792. 1891.
Andropogon hirtiflorus brevipedicellatus Beal, Grasses N. Am. 2: 44. 1896.
Schizachyrium oligostachyum Nash, in Small, Fl. SE. U. S. 59. 1903.

A tufted perennial with intravaginal innovations. Stems smooth and glabrous, up to 12 dm. tall, branching; leaf-sheaths keeled, glabrous, sometimes with a tuft of long hairs on each side at the apex, the lower ones sometimes hirsute; blades 1–2 dm. long, flat or complanate, commonly 3–4 mm. wide, smooth or rough, the upper surface sometimes with long hairs near the base, the margins near the base occasionally papillose-ciliate; spike-like racemes 4–12 cm. long, often included at the base, the rachis-internodes and the pedicels hirsute on the back and margins; sessile spikelet 7–9 mm. long, lanceolate, the first scale hirsute, smooth or rough, entire or bifid at the acute apex, the second scale glabrous, the fourth scale cleft to below the middle or nearly to the base, the teeth acute and usually ciliate, bearing an awn 12–20 mm. long, geniculate, the spiral column shorter than the hispidulous subula; pedicellate spikelet 3–5 mm. long, hispid, bearing an awn equaling or shorter than itself.

TYPE LOCALITY: Santo Domingo.
DISTRIBUTION: Georgia and Florida; Texas to Arizona, and south to Chile and Paraguay; Santo Domingo and Haïti.
ILLUSTRATIONS: Kunth, Rév. Gram. *pl. 198;* Bull. U. S. Dep. Agr. Agrost. 17: *f. 311;* Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 19;* Field Columb. Mus. Publ. Bot. 3: 19, *f.*

7. **Schizachyrium Salzmanni** (Trin.) Nash.

Rottboellia Salzmanni Trin.; Steud. Syn. Gram. 361. 1854.
? *Apogonia glabrata* Fourn. Mex. Pl. Gram. 63. 1881.
Andropogon imberbis muticus Hack. in DC. Monog. Phan. 6: 380. 1889.
Sorgum Salzmanni Kuntze, Rev. Gen. 790. 1891.

A smooth and glabrous tufted perennial, with numerous leaves crowded at the base, the sheaths equitant. Stems 4–6 dm. tall, somewhat compressed, branching above, the branches single or in pairs; leaf-sheaths compressed, keeled; blades up to 2 dm. long, 2–3 mm. wide, usually complanate, the midnerve very prominent beneath; spike-like racemes 3–7 cm. long, about 2 mm. in diameter, the rachis straight, the internodes stout, glabrous, with an oblique crenulate margin at the apex, about two thirds as long as the sessile spikelets, the pedicels usually a little longer than the internodes, glabrous, or rarely with a few long hairs at the deeply 2-toothed apex; sessile spikelet 6–7 mm. long, lanceolate, the first scale coriaceous at the yellowish base, the acute green apex often curved to one side, 7–9-nerved, the second scale acute, considerably shorter than the first, the fourth scale entire at the apex, awnless; pedicellate spikelet green, of 3 or 4 scales, awnless, sometimes with a staminate flower.

TYPE LOCALITY: Bahia, Brazil.
DISTRIBUTION: Guadeloupe; Martinique; Mexico to Paraguay.

8. **Schizachyrium tenerum** Nees, Agrost. Bras. 336. 1829.

Andropogon gracilis J. Presl, in Presl, Rel. Haenk. 1: 336. 1830. Not *A. gracilis* Spreng. 1825.
Andropogon tener Kunth, Rév. Gram. 565. 1832.
Andropogon leptophyllus Trin. Mém. Acad. St. Petersb. VI. **2**: 264. 1832.
Andropogon Preslii Kunth, Enum. 1: 489. 1833.
Andropogon tener scabriglumis Hack. in DC. Monog. Phan. **6**: 379. 1889.
Sorgum tenerum Kuntze, Rev. Gen. 792. 1891.

A smooth and glabrous tufted perennial, with intravaginal innovations. Stems often weak and decumbent, 4–10 dm. long, the branches in 1's or 2's; leaf-blades 2 dm. long or less, 0.5–2 mm. wide, the lower ones often sparingly hirsute above near the base; spike-like racemes 3–6 cm. long, the rachis straight, the internodes stout, channeled on the inner surface, about two thirds as long as the sessile spikelets, glabrous, the pedicels linear, not stout, pilose on the outer margin near the summit, usually equaling or a little exceeding the internodes; sessile spikelet about 4 mm. long, the first scale somewhat rounded on the back, smooth or rough, acute, the fourth scale deeply 2-cleft at the apex for less than one half its length, the awn of the fourth scale 7–10 mm. long, the column tightly spiral, exserted, about equaling the subula; pedicellate spikelet consisting of a single scale, 4–5 mm. long, awnless or awn-pointed.

TYPE LOCALITY: Montevideo, Uruguay.
DISTRIBUTION: Georgia and Florida to Louisiana; Illinois; Cuba; continental tropical America.
ILLUSTRATIONS: Kunth, Rév. Gram. *pl. 197;* Bull. U. S. Dep. Agr. Agrost. 17: *f. 309.*

9. **Schizachyrium semiberbe** Nees, Agrost. Bras. 336. 1829.

Andropogon vaginatus J. Presl, in Presl, Rel. Haenk. 1: 336. 1830. Not *A. vaginatus* Ell. 1816.
Andropogon velatus Kunth, Enum. 1: 488. 1833.
Andropogon semiberbis Kunth, Enum. 1: 489. 1833.
Andropogon semiberbis genuinus pruinatus Hack. in DC. Monog. Phan. 6: 370. 1889.
Andropogon semiberbis incertus Hack. in DC. Monog. Phan. 6: 370. 1889.
Sorgum semiberbe Kuntze, Rev. Gen. 792. 1891.

A smooth and glabrous tufted perennial, with intravaginal innovations. Stems 6–12 dm. tall, the branches in 1's or 2's; leaf-sheaths compressed, keeled; blades 3 dm. long or less, 2–5 mm. wide; spike-like racemes 5–8 cm. long, partially included at the base, the internodes equaling or shorter than the sessile spikelets, glabrous, or rarely with a few short hairs, the pedicels stout, oblong-elliptic, shorter than the internodes, ciliate only on the outer margin; sessile spikelet 5–7 mm. long, the first scale rounded on the back, glabrous, or rarely with a few short hairs, roughened, acuminate, the edges of the infolded margins touching each other, the third and fourth scales ciliate, the latter deeply 2-cleft nearly to the base, the awn 12–15 mm. long, the brown column tightly spiral, exserted, about equaling the subula; pedicellate spikelet consisting of a single hispidulous scale about 3 mm. long, with an awn about as long.

TYPE LOCALITY: Southern Brazil.
DISTRIBUTION: Florida to Cuba and Porto Rico, and from Mexico to Ecuador and Brazil.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 310;* Field Columb. Mus. Publ. Bot. **3**: 20, *f.*

10. **Schizachyrium cirratum** (Hack.) Nash.

Andropogon cirratus Hack. Flora 68 : 119. 1885.
Sorgum cirratum Kuntze, Rev. Gen. 791. 1891.

A tufted perennial with erect stems. Stems up to 7 dm. tall, somewhat branching, smooth and glabrous, terete; leaf-sheaths glabrous, shorter than the internodes; blades flat, or sometimes complanate, those on the innovations sometimes sparsely long-ciliate at the base, those on the stem up to 1.5 dm. long, 2–4 mm. wide; spike-like racemes 4–6 cm. long, usually exserted, the internodes of the rachis glabrous, or with a few hairs on the outer margin near the apex, the pedicels with the outer margin long-hairy near the apex; sessile spikelet 8–9 mm. long, including the hairy callus, the first scale lanceolate, rough, hispidulous on the keels, acute, the fourth scale cleft for two thirds to three fourths of its length, the teeth ciliate, the awn 13–20 mm. long, the spiral column about as long as the subula; pedicellate spikelet 6–8 mm. long, usually enclosing a staminate flower.

TYPE LOCALITY : Between eastern Texas and El Paso.
DISTRIBUTION : Western Texas to Arizona, Durango, Chihuahua, and Lower California.
ILLUSTRATION : Bull. U. S. Dep. Agr. Bot. 12[1] : *pl. 18*.

11. **Schizachyrium Schottii** (Rupr.) Nash.

Andropogon Schottii Rupr.; Hack. in Mart. Fl. Bras. 2[3] : 299. 1883.
Andropogon Schottii asperiglumis Hack. in DC. Monog. Phan. 6 : 383. 1889.
Sorgum Schottii Kuntze, Rev. Gen. 792. 1891.

Stems 4–8 dm. tall, slender, branched, the branches solitary at the nodes, simple; leaf-sheaths glabrous; blades 1–2 dm. long, 2–4 mm. wide, acute, glabrous, or ciliate at the very base, smooth, except the roughish margins; spathes 4–6 cm. long; spike-like racemes 5–7 cm. long, slender, the internodes equaling the sessile spikelets, ciliate on the margins, except the upper one third, otherwise glabrous, the pedicels equaling the internodes but more slender, ciliate with long hairs; sessile spikelet about 7 mm. long, pale-green, the first scale firm, linear, acuminate, glabrous, obsoletely 3-nerved in addition to the keels, the second scale acute, 1-nerved, ciliate, the third scale also ciliate, the fourth scale 2-cleft nearly to the base, the awn about 1.5 cm. long, the column included or scarcely exserted from the scales and about half as long as the subula; pedicellate spikelet about 3 mm. long, with an awn shorter than itself.

TYPE LOCALITY : Tocaia, Brazil.
DISTRIBUTION : Chihuahua (according to Hackel) ; also in Brazil.

12. **Schizachyrium condensatum** (H.B.K.) Nees, Agrost. Bras. 333. 1829.

Andropogon condensatus H.B.K. Nov. Gen. & Sp. 1 : 188. 1816.
? *Andropogon densus* Desv.; Hamilt. Prodr. 8. 1825.
? *Andropogon microstachyus* Desv.; Hamilt. Prodr. 8. 1825.
? *Deyeuxia spicata* Spreng. Syst. 1 : 254. 1825.
Andropogon scoparius J. Presl, in Presl, Rel. Haenk. 1 : 338. 1830. Not *A. scoparius* Michx. 1803.
Andropogon paniculatus Kunth, Enum. 1 : 494. 1833.
Andropogon Benthamianus Steud. Syn. Gram. 382. 1854.
Andropogon Lhotskyi Steud. Syn. Gram. 384. 1854.
? *Andropogon rectirhachis* Fourn. Mex. Pl. Gram. 61. 1881.
Andropogon condensatus corymbosus paniculatus Hack. in Mart. Fl. Bras. 2[3] : 297. 1883.
Andropogon condensatus elongatus Hack. in Mart. Fl. Bras. 2[3] : 297. 1883.
Sorgum condensatum Kuntze, Rev. Gen. 791. 1891.

A rather tall tufted perennial, with broad flat leaf-blades, and a corymbiform or long and narrow inflorescence. Stems stout, a little compressed, 3 dm. to 1 m. tall or more, the upper portion bearing few to many flowering branches; leaf-sheaths smooth and glabrous, sometimes glaucous, keeled, the basal ones and those on the innovations much compressed, equitant; ligule scarious, more or less lacerate, 2–4 mm. long; blades linear, acute, smooth and glabrous, strongly keeled on the lower surface, up to 2 dm. long and 5–10 mm. wide, those on the innovations often longer; inflorescence a dense corymbiform mass at the apex of the stem, or elongate and either narrow or broad; spike-like racemes 1–3 cm. long, included in the spathes or more or less exserted, the rachis usually flexuous, or occasionally straight, the internodes and pedicels from a little shorter to longer than the sessile spikelets, ciliate on the margins

with long hairs; sessile spikelet 3.5–5 mm. long, linear to lanceolate, smooth and glabrous, the outer scales keeled, otherwise nerveless, the first scale hispidulous on the keels toward the apex, the second scale hispidulous on the keel, the fourth scale 2-cleft nearly to the base, the awn 1–1.5 cm. long, the deep-brown closely spiral column usually much exserted, sometimes just emerging, a little shorter than the yellowish subula which is contorted or somewhat loosely spiral below; pedicellate spikelet commonly reduced to a single 2-nerved scale 1–2 mm. long which sometimes bears a short awn.

TYPE LOCALITY: Near Ibagué, Colombia.
DISTRIBUTION: Continental tropical America, and in the West Indies as far north as Guadeloupe.

13. **Schizachyrium Muelleri** Nash, sp. nov.

A tall stout perennial, with intravaginal innovations, flat leaf-blades, and a dense many-branched inflorescence. Stems up to 1 m. tall, much-branched above, the branches again subdivided 2 or 3 times; leaf-sheaths roughish, keeled; blades up to 3 dm. long, 3–5 mm. wide, smooth and glabrous; inflorescence dense, corymbiform; spike-like racemes 1.5–2 cm. long, usually partially included at the base in the tightly inrolled spathe, the rachis straight or somewhat flexuous, the internodes about one half as long as the sessile spikelets, ciliate on the margins with long ascending hairs which are about two and a half times their length, the pedicels about as long as the sessile spikelets, ciliate with hairs about as long as those on the internodes; sessile spikelet 4.5–5 mm. long, lanceolate, the first scale commonly 2-nerved in addition to the keels which are hispidulous above, the infolded margins rather narrow, the second scale about as long as the first, acute, the third scale violet-tinted, the fourth scale entire or shortly bifid at the apex, the awn 10–12 mm. long, hardly geniculate, the brown column loosely spiral, but little exserted, much shorter than the subula which is a little twisted below; pedicellate spikelet of a single scale, awnless, or sometimes with an awn 2–3 times its length.

Type collected at Vera Cruz, Mexico, 1855, *Fred. Müller 2176* (herb. Columbia Univ.).
DISTRIBUTION: Known only from the type locality.

14. **Schizachyrium scoparium** (Michx.) Nash, in Small, Fl. SE. U. S. 59. 1903.

Andropogon scoparius Michx. Fl. Bor. Am. 1: 57. 1803.
Andropogon purpurascens Muhl.; Willd. Sp. Pl. 4: 913. 1806.
Andropogon flexilis Bosc; Poir. in Lam. Encyc. Suppl. 1: 583. 1810.
? *Andropogon lolioides* Fourn. Mex. Pl. Gram. 62. 1881.
Andropogon scoparius maritimus divergens Hack. in DC. Monog. Phan. 6: 385. 1889.
Sorgum scoparium Kuntze, Rev. Gen. 792. 1891.
Andropogon scoparius polycladus Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. 24: 40. 1901.
Andropogon scoparius villosissimus Kearney; Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. 24: 41. 1901.
Schizachyrium villosissimum Nash, in Small, Fl. SE. U. S. 59. 1903.

A green or purplish, rarely glaucous, extremely variable, tufted perennial, with extravaginal innovations. Stems 4.5–15 dm. tall, the branches in 1's–4's and often subdivided; leaf-sheaths glabrous or pubescent, keeled, smooth or rough; blades 5 dm. long or less, up to 8 mm. wide, glabrous or pubescent; racemes 2–6 cm. long, the rachis straight or flexuous, the internodes from one half as long as the sessile spikelets to equaling them, straight or curved, ciliate with grayish hairs on the margins throughout or on the upper portion only, those at the apex 1–3 mm. long, sometimes hispidulous on the back, the pedicels erect or recurved, shorter than the sessile spikelets, usually glabrous below, ciliate above with long grayish hairs; sessile spikelet commonly 5–7 mm. long, rarely shorter or longer, the first scale often more or less roughened, the fourth scale entire or 2-toothed for one quarter of its length, the awn geniculate, 8–15 mm. long, the column closely or loosely spiral, included or exserted; pedicellate spikelet 2–6 mm. long, usually small, consisting of 1 or 2 scales and empty, very rarely nearly as large as the sessile spikelet and staminate.

TYPE LOCALITY: Carolina.
DISTRIBUTION: Maine and Vermont to Saskatchewan, Montana, and Washington, and south to Florida, Texas, and New Mexico.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 25*; ed. 2. *pl. 27*; Bull. Tenn. Exp. Sta. 7: *pl. 2, f. 6*; Bull. U. S. Dep. Agr. Agrost. 3: *f. 9*; 7: *f. 13*; 15: *f. 6*; Britt. & Brown, Ill. Fl. *f. 216*; Bull. U. S. Dep. Agr. Bot. 1: *pl. 4*; 6: *pl. 7*.

15. **Schizachyrium acuminatum** Nash, in Small, Fl. SE. U. S. 59. 1903.

Stems tufted, 7–10 dm. tall, the branches in 1's–3's; leaf-sheaths generally rough toward the summit, compressed, keeled; blades 2 dm. long or less, 5 mm. wide or less, rough; spike-like racemes finally exserted, 3–6 cm. long, the hairs of the internodes and pedicels grayish-white; sessile spikelet 1 cm. long, about twice the length of the internode, the awn about 1.5 cm. long, geniculate; pedicellate spikelet consisting of 2 scales, the first 4–5 mm. long, strongly hispidulous and bearing an awn 2 mm. long or less, the pedicel about two thirds as long as the sessile spikelet.

TYPE LOCALITY: Starkville, Mississippi.
DISTRIBUTION: Known only from the type locality.

16. **Schizachyrium neo-mexicanum** Nash.

Andropogon neo-mexicanus Nash, Bull. Torrey Club **25**: 83. 1898.

A tufted perennial with intravaginal innovations. Stems up to 1 m. tall, branching, the branches single or in pairs from the upper axils; leaf-sheaths shorter than the internodes, keeled, glabrous; blades 8–15 cm. long, 2–3 mm. wide, erect, rough; spike-like racemes 4–5 cm. long, the rachis straight, the internodes one half to two thirds as long as the sessile spikelets, long-ciliate on the margins with ascending white silky hairs, those at the apex about 3 mm. long, the pedicels about two thirds as long as the sessile spikelets, ciliate on the margins with long white silky hairs; sessile spikelet 8–9 mm. long, lanceolate, acuminate, glabrous, the third and fourth scales ciliate, the latter deeply 2-cleft for about one third its length, the awn 12–15 mm. long, the brown column tightly spiral, barely if at all exserted, shorter than the subula; pedicellate spikelet of a single subulate rough short-awned scale 5–6 mm. long.

TYPE LOCALITY: White Sands, Doña Ana County, New Mexico.
DISTRIBUTION: New Mexico.

17. **Schizachyrium littorale** (Nash) Bicknell, Bull. Torrey Club **35**: 182. 1908.

Andropogon littoralis Nash, in Britton, Man. 69. 1901.
Andropogon scoparius littoralis Hitchc. Rhodora **8**: 205. 1906.

A densely tufted perennial, the innovations with glaucous leaves with much compressed sheaths. Stems 8–10 dm. tall, compressed, branched; leaf-sheaths rough, keeled, those on the innovations much compressed; blades up to 2 dm. long, 3–7 mm. wide, rough, acute, strongly keeled on the lower surface; racemes usually 3–4 cm. long, the rachis commonly straight, the internodes from one half to two thirds as long as the sessile spikelets, long-ciliate on the margins, the hairs at the apex 4–5 mm. long, the pedicels, which are usually recurved, longer than the internodes, long-ciliate; sessile spikelet 8–10 mm. long, linear-lanceolate, glabrous, the fourth scale shortly 2-toothed at the apex, ciliate, the awn 1–1.5 cm. long, the brown column tightly spiral, barely if at all exserted from the scales, shorter than the subula; pedicellate spikelet a single awned scale.

TYPE LOCALITY: In sand along the seashore, New York.
DISTRIBUTION: In sand along the coast, Nantucket, Massachusetts, to Virginia.

18. **Schizachyrium maritimum** (Chapm.) Nash, in Small, Fl. SE. U. S. 59. 1903.

Andropogon maritimus Chapm. Fl. S. U. S. ed. 2. 668. 1883.

A glaucous perennial, with long creeping rootstocks, and smooth and glabrous leaves with spreading blades. Stems 4–6 dm. tall; leaf-sheaths compressed, keeled, the lower ones crowded and overlapping; blades 1 dm. long or less, 2–4 mm. broad, widely spreading; spike-like racemes usually partly included at the base, 3–4 cm. long, rather stout, the rachis commonly stout, the internodes about one half as long as the sessile spikelets, long-ciliate on the margins, the terminal hairs 5–7 mm. long, the pedicels as long as or longer than

the internodes, ciliate on the margins with long hairs; sessile spikelet 8–9 mm. long, about twice as long as the internodes, the first scale glabrous, the fourth scale deeply 2-cleft at the apex for less than one half its length, the awn 1–1.5 cm. long, the brown column tightly spiral, a little shorter than the subula; pedicellate spikelet 5–7 mm. long, awnless, consisting of 4 scales, the outer 2 acuminate and usually awn-pointed, the fourth scale enclosing a staminate flower.

TYPE LOCALITY: Sandy coast, western Florida.
DISTRIBUTION: Along the seacoast, western Florida to Mississippi.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 17: *f. 318*.

19. **Schizachyrium stoloniferum** Nash, in Small, Fl. SE. U. S. 59. 1903.

A tall perennial, with long creeping rootstocks and long extravaginal innovations. Stems 6–10 dm. tall, branched; leaf-sheaths keeled, more or less hirsute on the margins near the summit; blades 2 dm. long or less, 2–5 mm. wide, smooth beneath, rough above and hirsute near the base; spike-like racemes 3–4 cm. long, the rachis straight or somewhat flexuous, the internodes one half to two thirds as long as the sessile spikelets, ciliate on the margins above with long grayish hairs, the pedicels usually longer than the internodes, ciliate on the margins above with long grayish hairs; sessile spikelet 6–7 mm. long, acuminate, the first scale usually very rough on the back, the fourth scale entire at the apex, the awn 8–10 mm. long, the column spiral, shorter than the subula, not exserted; pedicellate spikelet of a single scale about 3 mm. long, hispidulous, bearing an awn shorter than itself.

TYPE LOCALITY: Western Florida.
DISTRIBUTION: Florida.

20. **Schizachyrium triaristatum** Nash, in Small, Fl. SE. U. S. 60. 1903.

A perennial with creeping rootstocks and long extravaginal innovations. Stems 6–8 dm. tall, branching; leaf-sheaths keeled, more or less hirsute on the margins near the summit; blades 1.5 dm. long or less, 3–5 mm. wide, hirsute above near the base; spike-like racemes 3–5 cm. long, the rachis usually straight, or sometimes flexuous, the internodes about one half as long as the sessile spikelets, ciliate with long grayish ascending hairs, the pedicels usually longer than the internodes and shorter than the sessile spikelets, long-ciliate with grayish ascending hairs, commonly recurved; sessile spikelet 9–10 mm. long, acuminate, the first scale smooth or nearly so, the keels sometimes extending into short awns, the fourth scale shortly 2-toothed at the apex, the awn 12–15 mm. long, the column tightly spiral, little if at all exserted; pedicellate spikelet of 2 scales, 6–8 mm. long, the first scale hispidulous, 3-awned.

TYPE LOCALITY: Florida.
DISTRIBUTION: Known only from the type locality.

21. **Schizachyrium gracile** (Spreng.) Nash, in Small, Fl. SE. U. S. 60. 1903.

Andropogon gracilis Spreng. Syst. 1: 284. 1825.
? *Andropogon juncifolius* Desv.; Hamilt. Prodr. 9. 1825.
Sorgum gracile Kuntze, Rev. Gen. 791. 1891.

A tufted perennial, with extravaginal innovations, smooth and glabrous with the exceptions mentioned below. Stems slender, rigid, 2–6 dm. tall, branched, the branches single or in pairs; leaf-sheaths glabrous, shorter than the internodes, strongly striate; blades 2 dm. long or less, very slender, terete, 0.8 mm. in diameter or less, strongly striate; spike-like racemes long-exserted, 3–5 cm. long, silvery-white, the rachis somewhat flexuous, the internodes a little shorter than the sessile spikelets, slender, the back and margins clothed with long hairs, those at the summit more than twice as long as the internodes, the pedicels as long as or a little shorter than the sessile spikelets; sessile spikelet 5–6 mm. long, the first scale chartaceous, faintly 2-nerved in addition to the keels, entire, smooth on the back, the keels his-

pidulous, the second scale equaling the first, acute, hispidulous on the keel, the fourth scale deeply 2-cleft for one quarter to one half its length, the awn 13–20 mm. long, the much-exserted column tightly spiral, the subula loosely so; pedicellate spikelet consisting of a single scale 1–2.5 mm. long, short-awned.

TYPE LOCALITY: Hispaniola.
DISTRIBUTION: Florida and the Bahamas, and from Jamaica and Cuba to Guadeloupe.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 17: *f. 312*.

22. **Schizachyrium cubense** (Hack.) Nash.

Andropogon cubensis Hack. Flora 68: 121. 1885.
Sorgum cubense Kuntze, Rev. Gen. 791. 1891.

A perennial plant with extravaginal innovations and a branching rootstock. Stems erect, sparingly branched above, up to 7 dm. tall, smooth and glabrous; leaf-sheaths strongly striate, glabrous; blades filiform, less than 1 mm. in diameter, 6–12 cm. long, glabrous, or usually with a few long hairs on the upper surface near the base; spike-like racemes 4–5 cm. long, the internodes and the pedicels minutely pubescent on the back, the margins ciliate with long hairs above the base; sessile spikelet 5–5.5 mm. long, oblong-lanceolate, the first scale entire or shortly 2-toothed at the apex, hispidulous on the back, the fourth scale entire at the apex, or very minutely 2-toothed, terminating in an awn 5–7 mm. long, the column included in the scales and with but 1 or 2 spirals, usually less than one half as long as the subula; pedicellate spikelet 2–3 mm. long, sometimes with a short awn.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Known only from the type locality.

23. **Schizachyrium multinervosum** Nash, sp. nov.

A tufted perennial with low slender stems, short terete leaf-blades, and slightly hairy spike-like racemes. Leaf-sheaths striate, smooth and glabrous, shorter than the internodes; ligule a narrow scarious ring; blades 3–7 cm. long, involute, up to 1.5 mm. wide when spread out, the lower surface glabrous, with a broad median band of white tissue; spike-like racemes 4–6 cm. long, straight, the internodes clavate and with a broad toothed hyaline margin at the apex, glabrous, the pedicels as long as the internodes or a little shorter, with a few long erect hairs on the outer margin near the apex, otherwise glabrous; sessile spikelet 4–4.5 mm. long and about 1.75 mm. wide, elliptic, the first scale 11–13-nerved, all but the keel-nerves vanishing at the hyaline and slightly 2-toothed apex, hispidulous on the keels above the middle, the second scale 1-nerved, keeled, acute, about as long as the first scale, the third scale hyaline, oblong, about three fourths as long as the spikelet, long-ciliate above the middle, the fourth scale 2-cleft to the middle, the teeth ciliate, the awn perfect, about 1.5 cm. long, the much-exserted brown tightly spiral column about as long as the light-colored hispidulous subula which is somewhat flexuous below; pedicellate spikelet about 3 mm. long, usually of 2 scales, the first one about 7-nerved.

Type collected in eruptive rock soil, Madruga, Cuba, March 25, 1903, *Britton & Shafer 608* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Central Cuba.

22. **ANDROPOGON** L. Sp. Pl. 1045. 1753.

Dichanthium Willem. Ann. Bot. Usteri 18: 11. 1796.
Anatherum Beauv. Agrost. 128. 1812.
Cymbopogon Spreng. Pugill. 2: 14. 1815.
Lepeocercis Trin. Fund. Agrost. 203. 1820.
Hypogynium Nees, Agrost. Bras. 364. 1829.
Dimeiostemon Raf.; Bull. Bot. Seringe 221. 1830.
Diplasanthum Desv. Opusc. 66. 1831.
Agenium Nees; Lindl. Introd. Nat. Syst. ed. 2. 447. 1836.
Euklastaxon Steud. Syn. Gram. 412. 1855.
Exotheca Anderss. Nova Acta Soc. Sci. Upsal. III. 2: 253. 1856.

Usually perennial, rarely annual, grasses, varying in habit, commonly with branched stems, the spike-like racemes in pairs, or digitately in 3's–5's, very rarely single, the spathes enclosing or distant from them. Rachis of the racemes fragile, the internodes and pedicels

filiform, or stouter and convex on the back, sometimes thickened at the apex, when separated with no deep depression nor appendage at the apex. Spikelets in pairs, dorsally compressed, the sessile one of the lower pair or pairs often differing from those above in sex, shape, or awns. Sessile spikelet, of at least the upper pairs, perfect, very rarely pistillate, usually awned; first scale commonly 2-keeled, with the margins infolded; second scale keeled; third scale hyaline; fourth scale usually hyaline, often parted or toothed at the apex and awned, more rarely entire and awnless, occasionally stipe-like, the awn perfect (with a spiral column) or imperfect. Pedicellate spikelet staminate or empty, as large as, or rarely larger than, the sessile one, often reduced to 1 or 2 scales, or entirely wanting, very rarely with a perfect flower. Stamens 1–3. Ovary glabrous. Stigmas from shorter to longer than the styles, usually exserted about the middle of the spikelet.

Type species, *Andropogon hirtus* L.

Raceme 1. — 1. *A. spathiflorus.*
Racemes 2 or more.
Sessile spikelets of all pairs, even the lowest, in all the racemes, alike.
Pedicellate spikelet empty, of 1 or 2 scales, much smaller than the sessile spikelet, sometimes entirely wanting, or occasionally in *A. bicornis* large and staminate.
Stamen 1.
Sessile spikelet 5 mm. long or less, the awn imperfect, or sometimes a little spiral at the base; pedicellate spikelet wanting or rudimentary, up to 2 mm. long.
Sessile spikelet with the intercarinal space of the first scale nerveless; anthers small, less than 2 mm. long.
Racemes of 8–20 internodes.
Inflorescence oblong to oval or obovate, the branches many times divided, the lower ones often elongate, forming 1 or more corymbiform masses; upper leaf-blades usually equaling or exceeding the inflorescence.
Spathes rough; apex of the common peduncle of the racemes hispidulous below the barbed summit. — 2. *A. glomeratus.*
Spathes smooth; apex of the common peduncle glabrous below the barbed summit. — 3. *A. tenuispatheus.*
Inflorescence long and narrow, linear, the branches not forming corymbiform masses.
Sheaths not enlarged.
Racemes long and lax, the internodes of the rachis much exceeding the sessile spikelets. — 15. *A. campyloracheus.*
Racemes relatively short and stout, the internodes equaling or shorter than the sessile spikelets.
Racemes sessile or nearly so, the common peduncle not more than 5 mm. long.
Plant green; leaf-sheaths and blades, either or both, pubescent.
Pubescence on the leaves dark, lax and spreading; pedicels and rachis-internodes relatively sparsely long-hairy above, usually naked below; callus-hairs less than one half as long as the spikelet. — 4. *A. virginicus.*
Pubescence on the leaves appressed, long and silky; pedicels and rachis-internodes copiously long-hairy their entire length; callus-hairs more than one half as long as the spikelet. — 5. *A. longiberbis.*
Plant blue- or gray-green, intensely glaucous; leaves glabrous. — 6. *A. capillipes.*
Racemes never sessile, the common peduncle more than 5 mm. long, usually more than 1 cm. or sometimes entirely exserted from the apex of the spathe.
Racemes in pairs.
Ligule rounded or acutish at the apex, 1–1.5 mm. long; blades of the innovations laterally compressed, the surface grown together, leaving a groove or furrow on the upper side. — 7. *A. perangustatus.*
Ligule a short, scarious, often ciliate, ring of equal length, less than 1

mm. long; blades flat or sometimes folded.
Spikelets 3–4 mm. long; racemes usually long-exserted from the apex of the spathes, the common peduncle sometimes considerably exposed.
Tall stout grasses; inflorescence much branched. 8. *A. floridanus.*
Low slender grasses; inflorescence simple or but little branched.
Basal hairs shorter than the spikelets, which are 3.5–4 mm. long, narrowly lanceolate, acuminate. 9. *A. subtenuis.*
Basal hairs much longer than the spikelets, which are 3–3.5 mm. long, elliptic, obtuse, or merely acutish. 10. *A. Nashianus.*
Spikelets 4.5–5 mm. long.
Stems slender, sparingly branched; leaf-blades 3 mm. wide or less; awns 1.5–2 cm. long. 11. *A. Tracyi.*
Stems stout, much branched above; leaf-blades 4–7 mm. wide; awns 6–10 mm. long. 12. *A. Bakeri.*
Racemes in 4's or 5's.
Sessile spikelet 3–4 mm. long, the awn about 1.5 cm. long; racemes often entirely exserted from the spathe, exposing the peduncle. 13. *A. Liebmanni.*
Sessile spikelet 4.5–5 mm. long, the awn 2–2.5 cm. long; racemes, at least below, included in the spathes. 14. *A. Mohrii.*
Sheaths at the summit or upper part of the stem much enlarged.
Only some of the flowering stems with the enlarged sheaths, the lower sheaths much exceeding the internodes. 15. *A. campyloracheus.*
All the flowering stems with such sheaths, the lower ones shorter than the internodes. 16. *A. Elliottii.*
Racemes of 4–6 internodes. 17. *A. brachystachyus.*
Sessile spikelet with the intercarinal space of the first scale 2-nerved; anthers 3 mm. long. 18. *A. arclatus.*
Sessile spikelet 6.5–7 mm. long, the awn perfect, geniculate, with a long well-defined spiral column as long as the subula; pedicellate spikelet 5–6 mm. long. 19. *A. Pringlei.*
Stamens 3.
Sessile spikelet awnless, or rarely with a very short imperfect awn.
Branches of the inflorescence much divided, forming dense corymbiform masses at the apex of the stem; pedicellate spikelet often staminate. 20. *A. bicornis.*
Branches of the inflorescence simple or a little branched, forming a lax narrow inflorescence. 21. *A. leucostachyus.*
Sessile spikelet awned, the awn perfect, with a manifest spiral column.
First scale of the sessile spikelet with the intercarinal space appressed-hispid, rather thin, usually depressed; leaf-sheaths sometimes pubescent.
Intercarinal space nerveless, or sometimes with 1 or 2 short nerves; terminal hairs of the internodes about twice their length. 22. *A. ternarius.*
Intercarinal space with 2 or 3 nerves running the entire length of the scale; terminal hairs of the internodes about equaling them in length. 23. *A. Cabanisii.*
First scale of the sessile spikelet with the intercarinal space glabrous and shining, flat, firm; leaf-sheaths glabrous and, with their blades, glaucous. 24. *A. Scribnerianus.*
Pedicellate spikelet staminate, of 3 or 4 scales, equaling or exceeding the sessile spikelet.
Sessile spikelet awnless, 6 mm. long or less. 25. *A. Bourgaei.*
Sessile spikelet awned, usually 7 mm. long or more.
Internodes copiously pubescent with long hairs.
Awn perfect, with a well-defined column; stems tufted, or sometimes with short rootstocks.

Rachis-internodes smooth; pedicellate spikelet staminate.
Sessile spikelet hispidulous on the intercarinal space; hairs of the rachis-internodes 2 mm. long or less. 26. *A. provincialis.*
Sessile spikelet, except the nerves toward the summit of the first scale, with the intercarinal space glabrous; hairs of the rachis-internodes 3–4 mm. long, usually yellow. 27. *A. chrysocomus.*
Rachis-internodes strongly hispidulous; pedicellate spikelet perfect. 28. *A. tennesseensis.*
Awn imperfect, rarely a little spiral at the base; plants usually with long horizontal rootstocks. 29. *A. Hallii.*
Internodes glabrous, or with a few weak crimped hairs. 30. *A. paucipilus.*
Sessile spikelet of the lower pair or 2–several pairs differing from those above, staminate or empty, awnless.
Fourth scale of each perfect sessile spikelet stipe-like, the blade wanting; racemes usually several together, sometimes 1 or 2; sessile and pedicellate spikelets resembling each other.
Apex of the stem below the inflorescence glabrous; sessile spikelet about 3 mm. long. 31. *A. caricosus.*
Apex of the stem below the inflorescence softly pubescent; sessile spikelet 4–5 mm. long. 32. *A. nodosus.*
Fourth scale of each perfect sessile spikelet linear, the blade present, usually bifid at the apex; racemes always in pairs; pedicellate spikelet unlike the sessile one.
Awns imperfect, glabrous; first scale of the sessile spikelet manifestly 2-keeled, the keels winged.
First scale of the sessile spikelet broadly lanceolate, the intercarinal space flat and 2–4-nerved. 33. *A. Nardus.*
First scale of the sessile spikelet lanceolate, the intercarinal space deeply depressed at the base, nerveless. 34. *A. ceriferus.*
Awns perfect, the column manifestly hispid; first scale of the sessile spikelet not 2-keeled, or only so at the apex.
Spikelets long-hairy; sessile spikelet with the callus very short or almost wanting, obtuse, shortly barbed, the first scale not sulcate. 35. *A. hirtus.*
Spikelets glabrous, or merely hispidulous toward the apex; sessile spikelet with the long acute or pungent callus long-barbed, the first scale sulcate.
Perfect sessile spikelet with a callus 1–1.5 mm. long, the awns 2–3 cm. long; internodes of the rachis setiferous. 36. *A. bracteatus.*
Perfect sessile spikelet with a callus 4 mm. long, the awns about 5 cm. long; internodes of the rachis not setiferous. 37. *A. Ruprechti.*

1. **Andropogon spathiflorus** (Nees) Kunth, Enum. 1: 496. 1833.

? *Andropogon virgatus* Desv.; Hamilt. Prodr. 9. 1825.
Hypogynium spathiflorum Nees, Agrost. Bras. 366. 1829.
? *Anatherum virgatum* Desv. Opusc. 71. 1831.
Andropogon inermis Steud. Syn. Gram. 390. 1854.
Anatherum spathiflorum Griseb. Cat. Pl. Cub. 236. 1866.
Anatherum inerme Griseb. Cat. Pl. Cub. 236. 1866.
Andropogon spathiflorus inermis Hack. in DC. Monog. Phan. 6: 398. 1889.
Sorgum spathiflorum Kuntze, Rev. Gen. 792. 1891.

A densely tufted perennial with intravaginal innovations. Stems up to 1 m. tall, simple below, much-branched above; leaf-sheaths keeled, compressed; blades of the innovations up to 4 dm. long, 1.5–2 mm. wide, those of the stem a little shorter and broader, glabrous or ciliate at the base; spathes acute, 1–1.5 cm. long, scarious, glabrous, brown, usually 2–3 times as long as the slender puberulous peduncle of the raceme; spike-like racemes dense, 6–13 mm. long, the rachis straight, the internodes and pedicels about one third as long as the sessile spikelets, glabrous; sessile spikelet 2.5–3.5 mm. long, linear-lanceolate, the first scale with narrowly infolded margins and aculeate keels, nerveless, excepting the keels, flat on the back, the second scale 1-nerved, the third scale shorter than the first, acute, 1-nerved, ciliolate, the fourth scale 2-toothed, awnless, or merely mucronate between the teeth, the flower pistillate with 3 rudimentary stamens; pedicellate spikelet equaling the sessile one, lanceolate, strongly colored, the first scale very acute, 3-nerved, the fourth scale entire, awnless, the 3 stamens perfect.

TYPE LOCALITY: In plains, behind Ypanema, São Paulo, Brazil.
DISTRIBUTION: Cuba; Haïti; Porto Rico; Costa Rica; also in tropical South America.
ILLUSTRATION: Mart. Fl. Bras. 2^3: *pl. 68, f. 1.*

2. **Andropogon glomeratus** (Walt.) B.S.P. Prel. Cat. N. Y. 67. 1888.

Cinna glomerata Walt. Fl. Car. 59. 1788.
Andropogon macrourus Michx. Fl. Bor. Am. 1 : 56. 1803.
Andropogon spathaceus Trin. Fund. Agrost. 186. 1820 ; Mém. Acad. St. Petersb. VI. 2 : 280. 1832.
Anatherum macrourum Griseb. Mem. Am. Acad. II. 8 : 534. 1862.
Andropogon macrourus abbreviatus Hack. in DC. Monog. Phan. 6 : 408. 1889.
Andropogon macrourus hirsutior Hack. in DC. Monog. Phan. 6 : 409. 1889.
Andropogon macrourus corymbosus Chapm.; Hack. in DC. Monog. Phan. 6 : 409. 1889.
Sorgum glomeratum Kuntze, Rev. Gen. 790. 1891.
Andropogon glomeratus hirsutior C. Mohr, Bull. Torrey Club 24 : 21. 1897.
Andropogon corymbosus Nash, in Britton, Man. 69. 1901.
Andropogon corymbosus abbreviatus Nash, in Britton, Man. 70. 1901.

Stems 4–10 dm. tall, rather stout, from a little longer than to twice as long as the basal leaves, the branches much divided, the lower ones usually elongate and nearly equaling the upper, thus forming a corymbiform panicle, the upper nodes of the primary and all those of the other branches densely barbed; leaf-sheaths keeled, those at the base much compressed and equitant, rough, often more or less papillose-hirsute, especially the shorter and crowded ones of the inflorescence; stem-leaves with blades 3 dm. long or less, 5 mm. wide or less, rough; spathes very rough, narrow and tightly rolled around the rather stout common peduncle of the racemes, which is densely hispidulous toward the summit, or loose and enclosing the racemes; racemes in pairs, 2–3 cm. long; sessile spikelet 4–5 mm. long, the awn 12–15 mm. long, straight or nearly so; pedicellate spikelet usually present as a subulate scale 1–2 mm. long.

TYPE LOCALITY: South Carolina.

DISTRIBUTION: Nantucket Island, Massachusetts; New York to Florida and Mississippi; Tennessee.

ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7 : *f. 9*; Bull. Tenn. Exp. Sta. 7 : *pl. 3, f. 11*; Britt. & Brown, Ill. Fl. *f. 221.*

3. **Andropogon tenuispatheus** Nash, sp. nov.

Andropogon macrourus pumilus Vasey, Bot. Gaz. 16 : 27. 1891. Not *A. pumilus* Roxb. 1820.
Andropogon glomeratus tenuispatheus Nash, in Small, Fl. SE. U. S. 61. 1903.

Stems 5–15 dm. tall, commonly stout, much branched, the branches repeatedly and fastigiately divided, the lower ones somewhat elongate but considerably shorter than the stem, thus forming a large oblong glomerate panicle, rarely shorter and corymbiform, the nodes of the secondary branches and their divisions, and sometimes the nodes of the primary branches, densely barbed; leaf-sheaths keeled, glabrous, or sometimes pubescent; blades up to 4 dm. long, 7 mm. wide or less, rough; spathes 2.5–3 cm. long, smooth and glabrous, equaling or somewhat exceeding the racemes, or tightly inrolled on the exserted or nearly exserted smooth and glabrous peduncle, fastigiately crowded at the summit of the stem and ends of the branches; racemes in pairs, 1–2 cm. long; sessile spikelet 3–4 mm. long, lanceolate, the first scale hispid on the keels, the intercarinal space flat or somewhat depressed, the fourth scale entire or nearly so, the awn 10–15 mm. long, straight or geniculate, the hispid subula many times longer than the column; pedicellate spikelet wanting, or present as a subulate rudimentary scale.

TYPE LOCALITY: Florida.

DISTRIBUTION: Georgia and Florida to southern California; Lower California; Guatemala; Bahamas and other West Indies; also in tropical South America.

ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 26* (as *A. macrourus*); ed. 2. *pl. 28*; Bull. U. S. Dep. Agr. Agrost. 17 : *f. 317.*

4. **Andropogon virginicus** L. Sp. Pl. 1046. 1753.

Andropogon dissitiflorus Michx. Fl. Bor. Am. 1 : 57. 1803.
Anatherum virginicum Spreng. Pugill. 2 : 16. 1815.
Andropogon vaginatus Ell. Bot. S. C. & Ga. 1 : 148. 1816.
Andropogon tetrastachyus Ell. Bot. S. C. & Ga. 1 : 150. 1816.
Andropogon eriophorus Scheele, Flora 27 : 51. 1844. Not *A. eriophorus* Willd. 1806.
? *Andropogon Louisianae* Steud. Syn. Gram. 383. 1854.
Andropogon Curtisianus Steud. Syn. Gram. 390. 1854.
Andropogon virginicus viridis ditior Hack. in DC. Monog. Phan. 6 : 411. 1889.
Andropogon virginicus tetrastachyus Hack. in DC. Monog. Phan. 6 : 411. 1889.
Sorgum virginicum Kuntze, Rev. Gen. 792. 1891.
Andropogon macrourus viridis Chapm.; Vasey, Contr. U. S. Nat. Herb. 3 : 11. 1892.
Andropogon virginicus vaginatus Chapm. Fl. S. U. S. ed. 3. 594. 1897.

Stems tufted, 5–10 dm. tall, the sparsely divided branches in 1's–3's, distant, the nodes glabrous, very rarely barbed; leaf-sheaths, at least the lower ones, commonly more or less tuberculate-hirsute on the margins with long usually lax hairs, or sometimes a part or the whole of the sheaths densely hirsute; ligules scarious, ciliate, about 0.5 mm. long; blades 4 dm. long or less, 2–5 mm. wide, rough or roughish, usually hirsute on the upper surface near the base; spathes 3–5 cm. long, extending beyond the racemes; racemes generally in pairs, rarely in 3's or 4's, 2–3 cm. long, the rachis slender and fragile; sessile spikelet 3–4 mm. long, narrowly linear-lanceolate, one and a half times to twice as long as the internodes, pale or colored, the first scale hispid on the keels, the callus barbed with hairs about one third as long as the spikelet, the fourth scale very shortly 2-toothed, with an awn 1–1.5 cm. long; pedicellate spikelet wanting, or rarely present as a minute scale, the pedicel exceeding the sessile spikelet.

TYPE LOCALITY: Virginia.
DISTRIBUTION: Rhode Island to Missouri and Oklahoma, and south to Florida, Texas, and Mexico; Bermudas; Bahamas; Jamaica; Cuba; Haïti.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 24*; ed. 2. *pl. 26*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 10*; Bull. Tenn. Exp. Sta. 7: *pl. 3, f. 10*; Britt. & Brown, Ill. Fl. *f. 220*.

5. **Andropogon longiberbis** Hack. Flora **68**: 131. 1885.

Sorgum longiberbe Kuntze, Rev. Gen. 792. 1891.

Stems tufted, 5–10 dm. tall, the branches in 1's–3's; leaf-sheaths, especially those on the innovations, appressed-hirsute with silky hairs, shorter than the internodes; blades 5 dm. long or less, up to 7 mm. wide, those on the innovations densely appressed-hirsute, those on the stem more or less so beneath, rough above; spathes 3–5 cm. long, usually considerably exceeding the racemes, commonly brown; racemes in pairs, rarely in 3's or 4's, 3–4 cm. long, stout; sessile spikelet 4–4.5 mm. long, pale, about twice as long as the stout rachis-internodes, the first scale hispid on the keels, the fourth scale shortly 2-toothed, bearing a straight or nearly straight awn 12–16 mm. long; pedicellate spikelet a subulate scale, or wanting, the pedicel rather stout and a little exceeding the sessile spikelet.

TYPE LOCALITY: Florida.
DISTRIBUTION: Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 315*.

6. **Andropogon capillipes** Nash, Bull. N. Y. Bot. Gard. **1**: 431. 1900.

Andropogon macrourus glaucopsis Ell. Bot. S. C. & Ga. **1**: 150. 1816.
Andropogon virginicus glaucus Hack. in DC. Monog. Phan. **6**: 411. 1889. Not *A. glaucus* Retz. 1789.
Andropogon virginicus dealbatus C. Mohr; Hack. in DC. Monog. Phan. **6**: 411. 1889.
Andropogon glomeratus glaucopsis C. Mohr, Bull. Torrey Club **24**: 21. 1897.
Andropogon glaucopsis Nash, in Small, Fl. SE. U. S. 62. 1903. Not *A. glaucopsis* Steud. 1854.

Whole plant blue- or grayish-green, intensely glaucous, smooth and glabrous. Stems 6–12 dm. tall, branched, the branches in 1's–3's; leaf-sheaths keeled, the lower ones compressed; blades 2 dm. long or less, 1–6 mm. wide, erect; spathes 2–6 cm. long, equaling or exceeding the racemes; racemes 1.5–4.5 cm. long, the rachis slender, the internodes clothed with long hairs; sessile spikelet 3–4 mm. long, linear to linear-lanceolate, about twice as long as the internodes, the first scale hispidulous on the keels above, the intercarinal space depressed, the fourth scale 2-toothed at the apex, bearing a hispidulous usually somewhat contorted imperfect awn 1–2 cm. long; pedicellate spikelet wanting, or present as a minute rudimentary scale, the pedicel as long as or a little exceeding the sessile spikelet.

TYPE LOCALITY: Florida.
DISTRIBUTION: North Carolina to Florida and Mississippi.

7. **Andropogon perangustatus** Nash, in Small, Fl. SE. U. S. 62. 1903.

Andropogon virginicus viridis stenophyllus Hack. in DC. Monog. Phan. **6**: 411. 1889. Not *A. stenophyllus* R. & S. 1817.

Stems 2–8 dm. tall, slender, the branches usually single, sometimes in pairs; leaf-sheaths glabrous; ligule 1–1.5 mm. long, rounded or acutish at the summit; blades 3 dm. long or less,

1–2 mm. wide, those on the innovations much compressed laterally, grooved or furrowed on the upper side, those on the stem flat, puberulent on the upper surface; spathes 4–5 cm. long, extending beyond the summit of the racemes which are in pairs, 2.5–4 cm. long; sessile spikelet 4.5–5 mm. long, one and a half times to twice as long as the internodes, the awn 12–18 mm. long; pedicellate spikelet wanting, or rarely present as a minute scale, the pedicel exceeding the sessile spikelet.

TYPE LOCALITY: Florida.
DISTRIBUTION: Georgia and Florida to Mississippi.

8. **Andropogon floridanus** Scribn. Bull. Torrey Club **23**: 145. 1896.

Stems tufted, 5–16 dm. tall, much branched above the middle, the branches in 1's–3's; leaf-sheaths roughish, usually shorter than the internodes; blades 5 dm. long or less, up to 1 cm. wide, rough; racemes in pairs, occasionally in 3's or 4's, 3–4 cm. long, the peduncle densely barbed, and exserted, or the racemes partly included at the base; sessile spikelet 3.5–4 mm. long, lanceolate, equaling or a little longer than the internodes, the first scale hispidulous on the keels above, the intercarinal space flat or somewhat depressed, the fourth scale entire, bearing an imperfect awn 8–12 mm. long; pedicellate spikelet wanting, or present as a small scale, the pedicel exceeding the sessile spikelet.

TYPE LOCALITY: Southern peninsular Florida.
DISTRIBUTION: Southern peninsular Florida.

9. **Andropogon subtenuis** Nash, in Small, Fl. SE. U. S. 63. 1903.

Stems 3–6 dm. tall, slender, the branches single; leaf-sheaths smooth and glabrous; blades 1.5 dm. long or less, 1–2 mm. wide, smooth beneath, rough above and usually somewhat hirsute near the base; racemes in pairs, exserted, or a little included in the narrow spathe, 2–3 cm. long; sessile spikelet 3.5–4 mm. long, exceeding the internodes, the basal hairs shorter than the spikelet, the first scale hispidulous above on the keels, the intercarinal space flat or somewhat depressed, the awn 1–1.5 cm. long, more or less contorted, slightly twisted at the base; pedicellate spikelet wanting, or a minute rudimentary scale, the pedicel considerably exceeding the sessile spikelet.

TYPE LOCALITY: Biloxi, Mississippi.
DISTRIBUTION: Florida to Mississippi.

10. **Andropogon Nashianus** Hitchc. Contr. U. S. Nat. Herb. **12**: 193. 1909.

Stems 3–4.5 dm. tall, single or in small tufts, simple, slender, glabrous; leaf-sheaths glabrous, or sparingly pilose toward the summit, much shorter than the internodes; blades 1–4 cm. long, 1 mm. wide, the basal sometimes 1 dm. long, the uppermost one almost wanting, complanate, glabrous; racemes in pairs, 3–4 cm. long, the pedicels and rachis-internodes equaling or shorter than the sessile spikelets, hairy with long hairs 5–7 mm. in length; sessile spikelet 3–3.5 mm. long, elliptic, obtuse or merely acute, the first scale hispidulous on the keels, the intercarinal space nerveless, the second scale shorter than the first, the fourth scale bearing an awn 1–1.5 cm. long; pedicellate spikelet reduced to a single involute scale 1–2 mm. long.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Cuba.

11. **Andropogon Tracyi** Nash, Bull. N. Y. Bot. Gard. **1**: 433. 1900.

Stems tufted, 5–8 dm. tall, the branches in 1's or 2's; leaf-sheaths smooth and glabrous; blades 2 dm. long or less, 1–3 mm. wide, smooth beneath, rough above and hirsute toward the base; spathes 4–5 cm. long, rather broad; racemes in pairs, shorter than the spathes or extending beyond them, 3–4 cm. long, rather stout; sessile spikelet 4.5–5 mm. long, about twice as long as the stout internodes which are densely clothed with silvery-white hairs longer than the spikelet, the first scale hispidulous on the keels, the fourth scale bearing an awn 1.5–2 cm. long, sometimes a little spiral at the base; pedicellate spikelet wanting, or present as a minute rudimentary scale, the pedicel exceeding the sessile spikelet.

TYPE LOCALITY: Columbus, Mississippi.
DISTRIBUTION: Georgia and Florida to Mississippi.

12. **Andropogon Bakeri** Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. **24**: 39. 1901.

A tall tufted perennial. Stems stout, 8–12 dm. tall, much-branched above, the branches in 3's or 4's, the lower internodes much compressed; leaf-sheaths longer than the internodes, glabrous or a little hirsute, the lower ones compressed, equitant; blades up to 4 dm. long, 4–7 mm. wide, flat, a little rough above; spathes 4–5 cm. long; racemes 1.5–3 cm. long, the rachis slender, the internodes shorter than the sessile spikelets, densely clothed with silky hairs longer than themselves; sessile spikelet linear-lanceolate, 5 mm. long, the callus barbed with hairs about 2 mm. long, the first scale with hispidulous keels, the keel of the second scale also hispidulous, the fourth scale acuminate, 2-toothed at the apex, bearing a slender straight awn 6–10 mm. long; pedicellate spikelet entirely wanting, the pedicel longer than the sessile spikelet and densely clothed with long white hairs.

TYPE LOCALITY: Pine lands, Grasmere, Florida.
DISTRIBUTION: Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **24**: *f. 14*.

13. **Andropogon Liebmanni** Hack. Flora **68**: 132. 1885.

Andropogon macrothrix Fourn. Mex. Pl. Gram. 60. 1881. Not *A. macrothrix* Trin. 1833.
Andropogon Liebmanni raripilus Hack. in DC. Monog. Phan. 6: 413. 1889.
Sorgum Liebmanni Kuntze, Rev. Gen. 792. 1891.

Stems up to 7 dm. tall, branched above, the branches simple, rather stout, usually in pairs, sparsely barbed at the nodes; leaf-sheaths appressed-hirsute above; blades up to 3 dm. long, 2–6 mm. wide, rough, the lower surface rather densely hirsute, the upper more sparsely so; spathes 3.5–5 cm. long; racemes in 4's or 5's, 2.5–3 cm. long, the internodes filiform, clothed with long hairs, those at the summit about twice as long as the internodes; sessile spikelet linear-lanceolate, 3–4 mm. long, the first scale entire, hispid on the keels, the callus-hairs less than one half as long as the scale, the second scale densely hispid on the keel, the fourth scale 2-toothed at the apex, bearing an awn about 1.5 cm. long, the column somewhat spiral at the base, much shorter than the subula; pedicellate spikelet 1–1.5 mm. long, the pedicel about equaling the sessile spikelet.

TYPE LOCALITY: Near Chinantla, Oaxaca.
DISTRIBUTION: Mexico.

14. **Andropogon Mohrii** Hack.; Vasey, Contr. U. S. Nat. Herb. **3**: 11. 1892.

Andropogon Liebmanni Mohrii Hack. in DC. Monog. Phan. 6: 413. 1889.
Andropogon Mohrii pungensis Ashe, Jour. Elisha Mitchell Soc. **15**: 114. 1898.

Stems 8–15 dm. tall, branched above, the branches divided, densely barbed at the nodes; leaf-sheaths densely hirsute; blades 3 dm. long or less, up to 5 mm. wide, densely hirsute; spathes 4–5 cm. long, equaling or a little shorter than the racemes; racemes in 4's, 3–4 cm. long, rather stout, the hairs at the summit of the internodes one and one half times as long as the sessile spikelets; sessile spikelet 4.5–5 mm. long, about twice as long as the internodes, the first scale bi-mucronate at the apex, hispid on the keels, the second scale hispid on the keel, the fourth scale with an awn 2–2.5 cm. long, slightly if at all twisted at the base; pedicellate spikelet wanting, or sometimes present as a small subulate scale, the pedicel usually a little shorter than the sessile spikelet.

TYPE LOCALITY: In wet pine woods, near Mobile, Alabama.
DISTRIBUTION: Washington County, North Carolina (according to Ashe); Georgia and northern Florida to Louisiana.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 314*.

15. **Andropogon campyloracheus** Nash, Bull. N. Y. Bot. Gard. **1**: 431. 1900.

Andropogon Elliottii laxiflorus Scribn. Bull. Torrey Club **23**: 146. 1896. Not *A. laxiflorus* Steud. 1854.

Stems densely tufted, 4–8 dm. tall, the terminal internode much elongate and slender, the branches single; leaf-sheaths much exceeding the internodes, overlapping, those on the

stem 13–17 cm. long, sparingly hirsute, those on the innovations densely hirsute with ascending hairs, the terminal one very narrow and tightly embracing the stem, the upper sheaths on some of the stems much enlarged and producing in their axils smaller spathes with concealed racemes; blades erect, 2 dm. long or less, 2–3 mm. broad, smooth beneath, hirsute above near the base; racemes in 2's–4's, flexuous, 5–10 cm. long; sessile spikelet 5 mm. long, usually much exceeded by the internodes, the terminal hairs of which are 8–10 mm. long, the awn more or less contorted, 1.5–2 cm. long, barely if at all twisted at the base; pedicellate spikelet wanting, or present as a minute rudimentary scale, the pedicel much exceeding the sessile spikelet.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: Florida and Mississippi.

16. **Andropogon Elliottii** Chapm. Fl. S. U. S. 581. 1860.

Andropogon clandestinus Hale; Vasey, Grasses U. S. 19. 1883. Not *A. clandestinus* Nees, 1854.
Andropogon Elliottii gracilior Hack. in DC. Monog. Phan. 6: 415. 1889.
Sorgum Elliottii Kuntze, Rev. Gen. 791. 1891.
? *Andropogon gyrans* Ashe, Jour. Elisha Mitchell Soc. 15: 113. 1898.
Andropogon gracilior Nash, in Small, Fl. SE. U. S. 63. 1903.

Stems tufted, 5–8 dm. tall, 2–3 times as long as the basal leaves, the nodes at the base of the inflated sheaths densely barbed; leaf-sheaths shorter than the internodes, the lower ones and those of the innovations often appressed-hirsute, those of the inflorescence much enlarged and densely crowded at the summit and also sometimes at the nodes below, 5–11 cm. long, 2–6 mm. wide; blades 2 dm. long or less, 2–5 mm. wide, usually smooth beneath, rough above and hirsute near the base; racemes in pairs, very rarely in 3's, 2–4 cm. long, one peduncle at each node exserted from the spathe, the remainder with the racemes concealed; sessile spikelet 3.5–5 mm. long, narrowly linear-lanceolate, equaling or somewhat exceeding the internodes, the first scale very acute, the keels hispidulous, the fourth scale 2-cleft for about one quarter of its length, awned from between the teeth, the awn geniculate, 1.5–2.5 cm. long, usually spiral at the base, the column exserted, much shorter than the subula; pedicellate spikelet a rudimentary scale, the pedicel usually much longer than the sessile spikelet.

TYPE LOCALITY: Wet or dry pine barrens, Florida.
DISTRIBUTION: Southern New Jersey to Florida, Missouri, and Texas.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 12*; Bull. Tenn. Exp. Sta. 7: *pl. 3, f. 9*; Britt. & Brown, Ill. Fl. *f. 222*.

17. **Andropogon brachystachyus** Chapm. Fl. S. U. S. ed. 2. 668. 1883.

Sorgum brachystachyum Kuntze, Rev. Gen. 791. 1891.

Stems tufted, 6–15 dm. tall, the branches in 1's–3's and usually pilose just below the nodes; leaf-sheaths smooth and glabrous; blades erect, 3 dm. long or less, 3–4 mm. wide, smooth beneath, on the upper surface rough and hirsute near the base; spathes narrow, 3–3.5 cm. long, glabrous, brown; racemes in pairs, shortly exserted, or partly included at the base, 1–2 cm. long, the very slender rachis somewhat flexuous, the internodes about one half as long as the sessile spikelets, filiform; sessile spikelet linear-lanceolate, 3–4.5 mm. long, the first scale pubescent between the keels, canaliculate-depressed upon the back, the callus barbed with hairs a little shorter than the scale, the fourth scale very shortly 2-toothed, with an awn 6–9 mm. long; pedicellate spikelet consisting of a single scale, the pedicel shorter than the sessile spikelet.

TYPE LOCALITY: Eastern Florida.
DISTRIBUTION: Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 17: *f. 316*.

18. **Andropogon arctatus** Chapm. Bot. Gaz. 3: 20. 1878.

Andropogon tetrastachyus distachyus Chapm. Fl. S. U. S. 581. 1860. Not *A. distachyos* L. 1753.
Sorgum arctatum Kuntze, Rev. Gen. 791. 1891.

Stems 1–1.5 m. tall, branched toward the summit, the branches in 1's–3's; leaf-sheaths, at least the lower ones, more or less densely appressed-hirsute at the summit; blades erect, 3 dm. long or less, up to 5 mm. wide, the upper surface rough, the lower usually densely ap-

pressed-hirsute toward the base; racemes in pairs, rarely in 3's or 4's, rather stout, dark-gray, 2.5–4 cm. long, long-exserted, the rachis of many internodes, the internodes about one half as long as the sessile spikelets, densely pubescent with long hairs; sessile spikelet linear-lanceolate, 5–6 mm. long, the first scale with the margins broadly infolded, the keels hispidulous, the back glabrous and slightly concave, the callus barbed with hairs about one third as long as the scale, the second scale with the keel hispidulous and the margins ciliate, the fourth scale shortly and acutely 2-toothed, ciliate, bearing an awn 7–12 mm. long, imperfect or sometimes a little spiral at the base; pedicellate spikelet usually present, consisting of a single scale, the pedicel considerably shorter than the sessile spikelet.

TYPE LOCALITY: Low pine barrens, western Florida.
DISTRIBUTION: Western Florida.

19. **Andropogon Pringlei** Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. **24**: 7. 1901.

A tufted perennial, with erect sparingly branched stems, short leaf-blades, and lax racemes. Stems about 1 m. tall, glabrous; leaf-sheaths shorter than the internodes, glabrous, the upper ones inflated; blades narrow, those on the innovations linear, 8–12 cm. long, 1–2 mm. wide, usually more or less hirsute on the upper surface, those on the stem shorter and broader, 2–6 cm. long, 3–4 mm. wide, linear-lanceolate; racemes in 2's–4's, subdigitate, the rachis somewhat flexuous, the internodes and pedicels pubescent with long white hairs; sessile spikelet linear-lanceolate, 6–8 mm. long, about twice as long as the internodes, the first scale 2-toothed at the apex, hispidulous on the keels, the intercarinal space flat or nearly so, the second scale keeled, the fourth scale deeply 2-cleft at the apex and bearing a perfect awn 1–1.5 cm. long; pedicellate spikelet about 5 mm. long, reduced to 1 or 2 purplish narrow scales.

TYPE LOCALITY: Valley of Mexico, Federal District.
DISTRIBUTION: Known only from the type locality.

20. **Andropogon bicornis** L. Sp. Pl. 1046. 1753.

Anatherum bicorne Beauv. Agrost. 150. 1812.
Sorgum bicorne Kuntze, Rev. Gen. 791. 1891.

A tall usually much branched perennial, the branches repeatedly divided and borne in dense corymbiform masses. Stems 1 m. tall or more; leaf-sheaths glabrous; blades flat, 3–4 mm. broad, glabrous, or long-ciliate toward the base, those on the innovations up to 7 dm. long, those on the stem shorter; spathes 3–5 cm. long, brown, somewhat distant from the racemes or more or less enclosing them; racemes slender, the rachis capillary, the internodes and pedicels long-hairy, the former about as long as the sessile spikelets; sessile spikelet linear-lanceolate, 2.5–3.5 mm. long, the first scale with the callus sparsely barbed with hairs about one half as long as the scale, the fourth scale entire, acute, awnless; pedicellate spikelet usually reduced to a single scale, or rarely larger and staminate.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Throughout tropical America.
ILLUSTRATION: Beauv. Agrost. *pl. 22, f. 11.*

21. **Andropogon leucostachyus** H.B.K. Nov. Gen. & Sp. **1**: 187. 1816.

Andropogon virginicus L. Sp. Pl. ed. 2. 1482, in part. 1763. Not *A. virginicus* L. 1753.
Anatherum virginicum Spreng. Pugill. 2: 16, in part. 1815.
Andropogon lanuginosus H.B.K. Nov. Gen. & Sp. 1: 187. 1816.
Anatherum domingense R. & S. Syst. Veg. 2: 809. 1817.
Andropogon domingensis Fourn. Mex. Pl. Gram. 61. 1881.
Sorgum leucostachyum Kuntze, Rev. Gen. 792. 1891.

A densely tufted perennial. Stems 3–8 dm. tall, slender, or sometimes stout, branched above, the branches elongate, slender, glabrous; ligules 1–1.5 mm. long, truncate or rounded; leaf-sheaths glabrous; blades up to 3 dm. long, 1.5–2, or rarely 5 mm. wide, glabrous; racemes in 2's–5's, 3–6 cm. long, the internodes of the rachis capillary; sessile spikelet 2.5–4 mm. long, the first scale membranous, the callus barbed with hairs about one half the length of the scale,

the fourth scale muticous, or with an awn equaling or shorter than itself; pedicellate spikelet wanting, or up to 1.5 mm. long, empty, or rarely as large as the sessile spikelet and staminate.

TYPE LOCALITY: Banks of rivulets in the valley of Caripa, Cumana, Venezuela.
DISTRIBUTION: Throughout tropical America.

22. **Andropogon ternarius** Michx. Fl. Bor. Am. 1: 57. 1803.

Andropogon argenteus Ell. Bot. S. C. & Ga. 1: 148. 1816. Not *A. argenteus* DC. 1813.
Andropogon argyraeus Schultes, in R. & S. Syst. Veg. Mant. 2: 450. 1824.
Andropogon Muhlenbergianus Schultes, in R. & S. Syst. Veg. Mant. 2: 455. 1824.
Andropogon Belvisii Desv. Opusc. 67. 1831.
Sorgum argenteum Kuntze, Rev. Gen. 790. 1891.
Andropogon argyraeus tenuis Vasey, Contr. U. S. Nat. Herb. 3: 12. 1892.
Andropogon argyraeus macrus Hack.; Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. 24: 39. 1901.
Andropogon mississippiensis Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. 24: 40. 1901.

Stems tufted, 8–12 dm. tall, about twice as long as the basal leaves, the branches in 1's–3's; leaf-sheaths smooth or rough, glabrous or hirsute; blades 3 dm. long or less, up to 3 mm. wide, rough; racemes in pairs, rather stout, silvery-gray, 3–5 cm. long, long-exserted; sessile spikelet 5–6 mm. long, about twice as long as the internodes, the first scale appressed-pubescent on the nerveless intercarinal space which is usually deeply canaliculate-depressed, acuminate from about the lower third, the margins narrowly infolded, the keels densely hispid, the fourth scale with the awn 1.5–2.5 cm. long; pedicellate spikelet of a single scale, 1–3 mm. long, the pedicel usually a little shorter than the sessile spikelet.

TYPE LOCALITY: In mountains, Carolina.
DISTRIBUTION: Delaware to Missouri and Oklahoma, and south to Florida and Texas.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 11*; 24: *f. 15*; Bull. Tenn. Exp. Sta. 7: *pl. 2, f. 8*; Britt. & Brown, Ill. Fl. *f. 217*; Beauv. Agrost. *pl. 23, f. 4*.

23. **Andropogon Cabanisii** Hack. Flora 68: 133. 1885.

Sorgum Cabanisii Kuntze, Rev. Gen. 791. 1891.

Stems 6–10 dm. tall, the branches in 1's or 2's; leaf-sheaths smooth or a little roughened; blades 2.5 dm. long or less, 2–4 mm. broad, smooth beneath, rough above; spathes 6–8 cm. long; racemes in pairs, on a peduncle which is densely barbed at the apex, 4–7 cm. long, grayish, the internodes of the rachis shorter than the sessile spikelets, the hairs at the apex of the internodes about equaling them, rather scant; sessile spikelet 5–7 mm. long, broadly lanceolate, tapering from the middle, the first scale strongly hispidulous and 2- or 3-nerved between the keels, the nerves running the entire length of the scale, the intercarinal space a little depressed, the callus barbed with short hairs, the fourth scale bearing a very slender awn 1.5–2 cm. long, slightly spiral at the base; pedicellate spikelet of a single hispidulous scale 3–3.5 mm. long, the pedicel about two thirds as long as the sessile spikelet.

TYPE LOCALITY: Florida.
DISTRIBUTION: Pennsylvania (according to Hackel) and Florida.

24. **Andropogon Scribnerianus** Nash, Bull. N. Y. Bot. Gard. 1: 432. 1900.

Andropogon Elliottii glaucescens Scribn. Bull. Torrey Club 23: 145. 1896. Not *A. glaucescens* H.B.K. 1816.

Glaucous. Stems tufted, 3–10 dm. tall, twice as long as the basal leaves, rather sparsely branched above; leaf-sheaths shorter than the internodes, smooth and glabrous; blades 1 dm. long or less, up to 2.5 mm. wide, the upper surface minutely pubescent and also often hirsute near the base; racemes in pairs, stout, long-exserted, 4–7 cm. long, bright and silvery-white, the hairs on the internodes copious, those at the summit about twice the length of the internode; sessile spikelet 5–6 mm. long, about twice as long as the internodes, the first scale narrowed from about the middle, the intercarinal space flat or nearly so, usually 1–3-nerved, glabrous and shining, or sometimes hispidulous at the apex, the awn of the fourth scale more or less contorted and bent, somewhat twisted below, 1–1.5 cm. long; pedicellate spikelet wanting, or present as a small scale 1.5 mm. long or less, the pedicel equaling or a little shorter than the sessile spikelet.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: Georgia and Florida.

25. **Andropogon Bourgaei** Hack. Flora **68**: 134. 1885.

Andropogon glaucescens Fourn. Mex. Pl. Gram. 60, in part. 1881.
Sorgum Bourgaei Kuntze, Rev. Gen. 791. 1891.

Stems 1 m. tall or more, sparingly branched above, the branches usually in pairs; leaf-sheaths glabrous; blades 4–6 mm. wide, linear, acute, rough, especially on the margins, glabrous or somewhat hairy, those on the innovations up to 3 dm. long, those on the stem up to 2 dm.; spathes 5–6 cm. long, glabrous; racemes 4–6 cm. long, in pairs or in 3's on a peduncle which is barbed at the apex, exserted from the spathe, nodding, the internodes of the rachis slender, equaling the sessile spikelets; sessile spikelet 4–5 mm. long, the first scale acute, nerveless except for the hispidulous keels, the intercarinal space somewhat depressed and glabrous, the callus barbed with hairs more than one half as long as the scale, the fourth scale lanceolate, 1-nerved, entire, awnless; pedicellate spikelet usually staminate, rarely empty or reduced to a single scale, 5–5.5 mm. long, lanceolate, the first scale 5-nerved, the second 3-nerved.

TYPE LOCALITY: Orizaba, Vera Cruz.
DISTRIBUTION: Vera Cruz.

26. **Andropogon provincialis** Lam. Encyc. **1**: 376. 1783.

Andropogon Gerardi Vitm. Summa Pl. **6**: 16. 1792.
Andropogon furcatus Muhl.; Willd. Sp. Pl. **4**: 919. 1806.
Andropogon ternarius Bertol. Mem. Accad. Bologna **2**: 600. 1850. Not *A. ternarius* Michx. 1803.
Andropogon provincialis furcatus Hack. in DC. Monog. Phan. **6**: 442. 1889.
Andropogon provincialis Lindheimeri Hack. in DC. Monog. Phan. **6**: 443. 1889.
Andropogon provincialis pycnanthus Hack. in DC. Monog. Phan. **6**: 443. 1889.
Sorgum provinciale Kuntze, Rev. Gen. 792. 1891.

Stems 1–2 m. tall; leaf-sheaths glabrous or hirsute; blades 6 dm. long or less, up to 12 mm. wide, smooth or rough, glabrous or hirsute; racemes in 2's–6's, 5–10 cm. long, stout, long-exserted, the hairs of the internodes and pedicels grayish, 1–2 mm. long; sessile spikelet 7–10 mm. long, more or less hispidulous, the awn 7–15 mm. long, perfect, geniculate; pedicellate spikelet as large as or a little smaller than the sessile, staminate, awnless.

TYPE LOCALITY: Provence, France.
DISTRIBUTION: Maine to Saskatchewan, and south to Florida, Texas, and northern and central Mexico; also in France.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 27*; ed. 2. *pl. 29*; Bull. U. S. Dep. Agr. Agrost. **7**: *f. 14*; **20**: *f. 13*; Bull. Tenn. Exp. Sta. **5**: *f. 5*; **7**: *pl. 2, f. 7*; Britt. & Brown, Ill. Fl. *f. 219*; Schreb. Beschr. Gräs. *pl. 48*; Bull. U. S. Dep. Agr. Bot. **1**: *pl. 3*; **6**: *pl. 8*; Circ. U. S. Dep. Agr. Agrost. **4**: *f. 3*.

27. **Andropogon chrysocomus** Nash, in Britton, Man. 70. 1901.

A tall usually stout perennial with extravaginal innovations. Stems 7–15 dm. tall, the branches in 1's–3's; leaf-sheaths smooth and glabrous; blades up to 3 dm. long, 7 mm. wide or less, smooth beneath, a little roughened above; racemes in 2's–4's, 5–9 cm. long, stout, long-exserted, the hairs of the internodes and pedicels 3–4 mm. long, usually yellow; sessile spikelet 8–10 mm. long, lanceolate, barbed at the base with hairs about 1 mm. long, the first scale hispid on the keels, the margins broadly infolded, the intercarinal space canaliculate-depressed and hispidulous toward the apex, the second scale hispid on the keel toward the apex, the fourth scale 2-toothed at the apex, bearing a perfect geniculate awn 10–12 mm. long; pedicellate spikelet equaling the sessile one, awnless.

TYPE LOCALITY: [Stevens County,] Kansas.
DISTRIBUTION: Nebraska and Wyoming to Texas.

28. **Andropogon tennesseensis** Scribn. Circ. U. S. Dep. Agr. Agrost. **16**: 1. 1899.

Andropogon provincialis tennesseensis Scribn. Bull. Tenn. Exp. Sta. **7**: 23. 1894.

Stems 1–1.5 m. tall, stout, the branches in 1's or 2's; leaf-sheaths, at least the lower ones, hirsute toward the summit; blades 6 dm. long or less, 6–12 mm. wide, rough, the lower surface sometimes hirsute, and also the upper surface near the base; racemes in 2's–4's, 5–8 cm. long; sessile spikelet about 8.5 mm. long, broadly lanceolate, twice as long as the hispidulous internodes, strongly hispidulous, the awn of the fourth scale geniculate, about 1.5 cm. long, the

spiral column a little exserted; pedicellate spikelet 8–10 mm. long, of 4 scales, perfect, strongly hispidulous, the first scale often short-awned, the hispidulous pedicel less than one half as long as the sessile spikelet.

TYPE LOCALITY: Near Knoxville, Tennessee.
DISTRIBUTION: Tennessee and Mississippi.

29. **Andropogon Hallii** Hack. Sitz.-ber. Akad. Wien 89[1]: 127. 1884.

Andropogon Hallii flaveolus Hack. Sitz.-ber. Akad. Wien 89[1]: 128. 1884.
Andropogon Hallii incanescens Hack. Sitz.-ber. Akad. Wien 89[1]: 128. 1884.
Andropogon Hallii muticus Hack. in DC. Monog. Phan. 6: 444. 1889.
Sorgum Hallii Kuntze, Rev. Gen. 791. 1891.
Andropogon geminatus Hack.; Beal, Grasses N. Am. 2: 55. 1896.
Andropogon Hallii grandiflorus Scribn. Bull. U. S. Dep. Agr. Agrost. 5: 21. 1897.

A tall usually glaucous perennial with long stout rootstocks. Stems up to 1.5 m. tall, branched; leaf-sheaths glabrous; blades erect, rigid, up to 3 dm. long and 1 cm. wide, long-acuminate, smooth, glabrous, or sometimes with a few scattered hairs on the upper surface; racemes in 2's or 3's, at length exserted from the spathes, 3–8 cm. long, straight, stout, the internodes and pedicels densely long-hairy, the hairs white or yellowish; sessile spikelet 8–12 mm. long, linear-lanceolate, the first scale hispidulous or long-hairy on the keels, the intercarinal space glabrous or appressed-pubescent, the second scale 1-nerved, long-ciliate on the keel, the fourth scale lanceolate, 2-toothed, ciliate, awnless, or bearing a glabrous imperfect awn shorter than the scale; pedicellate spikelet equaling or larger than the sessile one, lanceolate, the first scale long-ciliate or hispid on the keels, usually hispidulous on the back, 5–9-nerved, the second scale equaling the first, 1-nerved, ciliate on the margins and usually on the keel.

TYPE LOCALITY: Rocky Mountains of Colorado.
DISTRIBUTION: North Dakota and Wyoming to Texas and Arizona.
ILLUSTRATIONS: Beal, Grasses N. Am. 2: *f. 14*; Bull. U. S. Dep. Agr. Agrost. 17: *f. 319*; Britt. & Brown, Ill. Fl. *f. 218*; Rep. Sec. Agr. 1892: Bot. *pl. 5*.

30. **Andropogon paucipilus** Nash, in Britton, Man. 70. 1901.

A glabrous perennial. Stems up to 1 m. tall, sparingly branched above; leaf-sheaths shorter than the internodes; ligule scarious, about 3 mm. long; blades erect, firm, usually somewhat glaucous, long-acuminate, the lower 2–3 dm. long and 5–7 mm. wide; racemes in pairs, 5–8 cm. long, the rachis-internodes less than one half as long as the sessile spikelets, glabrous, or the margins with a few long weak crimped hairs; sessile spikelet lanceolate, about 1 cm. long, acuminate, the first scale sulcate on the back, the margins infolded, the keels hispidulous above, the intercarinal space 2-nerved, the second scale 1-nerved, the fourth scale with an imperfect awn less than one half its length; pedicellate spikelet staminate, a little smaller than the sessile one, the first scale 9-nerved, not sulcate, the pedicel shorter than the sessile spikelet, sparsely pubescent with long weak crimped hairs.

TYPE LOCALITY: Three miles northeast of Whitman, Grant County, Nebraska.
DISTRIBUTION: Montana and Nebraska.

31. **Andropogon caricosus** L. Sp. Pl. ed. 2. 1480. 1763.

Andropogon serratus Retz. Obs. 5: 21. 1789.
Lepeocercis serrata Trin. Fund. Agrost. 203. 1820.
Sorgum caricosum Kuntze, Rev. Gen. 791. 1891.
Andropogon annulatus subrepens Hack. Notizbl. Bot. Gart. Berlin 1: 327. 1897.

Stems 2–6 dm. tall, slender, usually branched above, decumbent and rooting at the base, glabrous at the apex; leaf-sheaths compressed, shorter than the internodes, keeled; blades up to 12 cm. long, 2–4 mm. wide, smooth beneath, usually pubescent above; racemes solitary, sometimes in 2's or 3's, 3–5 cm. long, the internodes and pedicels about one third as long as the sessile spikelets, ciliate on one margin; perfect sessile spikelet about 3 mm. long, somewhat convolute below, the first scale chartaceous-herbaceous, broadly obovate-elliptic, the manifest hispid wings ending abruptly below the apex, smooth and shining on the back which is pilose below, 8-nerved, the fourth scale bearing an awn 1.5–2 cm. long; pedicellate spikelet equaling the sessile one and similar to it, flat, more pubescent, the first scale 15–19-nerved, ciliate on the keels.

TYPE LOCALITY: India.
DISTRIBUTION: Introduced into Guadeloupe; a native of the tropics of the Old World.
ILLUSTRATION: Trin. Ic. *pl. 329*.

32. **Andropogon nodosus** (Willem.) Nash.

Dichanthium nodosum Willem. Ann. Bot. Usteri **18**: 11. 1796.
Andropogon aristatus Poir. in Lam. Encyc. Suppl. **1**: 585. 1810.
Andropogon mollicomus Kunth, Rév. Gram. 365. 1830.
Diplasanthum lanosum Desv. Opusc. 67. 1831.
Andropogon caricosus mollicomus Hack. in DC. Monog. Phan. **6**: 569. 1889.

Stems up to 1.5 m. tall, rather stout, usually branched above, decumbent and rooting below, softly pubescent at the apex below the inflorescence; leaf-sheaths compressed, keeled, shorter than the internodes; blades up to 3 dm. long, 4–6 mm. wide, usually rough, glabrous, or pubescent at the base; racemes in 2's–4's, sometimes solitary, 6–10 cm. long, the internodes and pedicels about one third as long as the sessile spikelets, ciliate on one margin; perfect sessile spikelet 4–5 mm. long, somewhat convolute below, the first scale chartaceous-herbaceous, broadly obovate-elliptic, about 12-nerved, the nerves vanishing below the somewhat 3-toothed apex, pubescent on the smooth shining back, the second scale much narrower and almost enclosed by the first, the fourth scale bearing an awn 2–2.5 cm. long; pedicellate spikelet equaling the sessile one and similar to it, but flat and more pubescent, the first scale 15–19-nerved, ciliate on the keels.

TYPE LOCALITY: Mauritius.
DISTRIBUTION: Introduced into Florida, Antigua, Guadeloupe, and Barbados; a native of the Old World tropics.
ILLUSTRATIONS: Kunth, Rév. Gram. *pl. 96;* Desv. Opusc. *pl. 5, f. 1.*

33. **Andropogon Nardus** L. Sp. Pl. 1046. 1753.

Sorgum Nardus Kuntze, Rev. Gen. 792. 1891.

A tall aromatic perennial, with the elongate leaves crowded at the base of the stem, and a large decompound inflorescence. Stems 1–2 m. tall, much branched; leaf-sheaths terete, smooth and glabrous, glaucous; blades up to 1 m. long, 1.5–2 cm. wide, glabrous, glaucous below; inflorescence up to 8 dm. long, lax; spathes narrowly cymbiform, 1.5–2 cm. long; racemes 1–1.5 cm. long, of 4 or 5 internodes, equaling or extending somewhat beyond the apex of the spathes; perfect sessile spikelet 4–5 mm. long, lanceolate, narrowed from the middle or above, the first scale narrowly winged on the keels, the intercarinal space flat and 2–4-nerved, the fourth scale 2-toothed at the apex, muticous or mucronate; pedicellate spikelet staminate, acute.

TYPE LOCALITY: India.
DISTRIBUTION: Old World tropics, often cultivated in the American tropics, and escaping in Florida, Jamaica, Martinique, and Guadeloupe.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. **3**: 20, *f.*

34. **Andropogon ceriferus** Hack. in Mart. Fl. Bras. **2**^{3}: 281. 1883.

Andropogon Nardus ceriferus Hack. in DC. Monog. Phan. **6**: 605. 1889.

A tall aromatic grass, with the elongate leaves crowded at the base of the stem, and a long lax decompound inflorescence. Stems 1–2 m. tall, much branched, ceriferous at the nodes; leaf-sheaths terete, smooth and glabrous; blades up to 1 m. long, 1–2 cm. wide, usually rough, glaucous; inflorescence 3–8 dm. long, linear-oblong, usually interrupted below, the elongate branches and their divisions somewhat nodding; spathes lanceolate, 1.5–2 cm. long; racemes in pairs, 1.5–2 cm. long, of about 4 internodes, included in the spathes or exserted a little beyond them; perfect sessile spikelet linear-lanceolate, acuminate, the first scale minutely 2-toothed at the apex, the keels narrowly margined, the intercarinal space nerveless, canaliculate-depressed at the base, the fourth scale 2-toothed at the apex, shortly mucronate between the teeth; pedicellate spikelet staminate, dark-violet.

TYPE LOCALITY: Near Rio de Janeiro, Brazil.
DISTRIBUTION: Jamaica, Cuba, Porto Rico, St. Thomas, and Barbados; also in Brazil.

35. **Andropogon hirtus** L. Sp. Pl. 1046. 1753.

Trachypogon hirtus Nees, Agrost. Bras. 346. 1829.
Sorgum hirtum Kuntze, Rev. Gen. 792. 1891.

Stems 4–12 dm. tall, somewhat branched above; leaves glaucous; sheaths glabrous; blades up to 2 dm. long, 1.5–3 mm. wide, linear, rigid, rough; inflorescence 1.5–4 dm. long,

lax, the branches elongate, slender; spathes 4–8 cm. long, glabrous or pubescent; racemes in pairs, the subsessile one with a pair of homogamous spikelets at the base, the internodes of the rachis and the pedicels ciliate with long hairs; perfect sessile spikelet 4–6 mm. long, hirsute, the first scale 7-nerved, the nerves vanishing below the apex, the fourth scale 2-toothed, bearing a perfect awn 1.5–3.5 cm. long; pedicellate spikelet resembling the sessile one, hirsute.

TYPE LOCALITY: Portugal.
DISTRIBUTION: Introduced into Haïti and Mexico; a native of the Old World.
ILLUSTRATIONS: Host, Gram. Austr. 4: *pl. 1;* Reichenb. Ic. Fl. Germ. *f. 460.*

36. **Andropogon bracteatus** H. & B.; Willd. Sp. Pl. **4**: 914. 1806.

Cymbopogon Humboldtii Spreng. Pugill. **2**: 15. 1815.
Anthistiria reflexa H.B.K. Nov. Gen. & Sp. **1**: 191. 1816.
Anthistiria foliosa H.B.K. Nov. Gen. & Sp. **1**: 191. 1816.
Cymbopogon reflexus R. & S. Syst. **2**: 834. 1817.
Cymbopogon foliosus R. & S. Syst. **2**: 835. 1817.
Anthistiria Humboldtii Nees, Agrost. Bras. 369. 1829.
Anthistiria pilosa J. Presl, in Presl, Rel. Haenk. 1: 348. 1830.
Andropogon trachypus Trin. Mém. Acad. St. Petersb. VI. **2**: 280. 1832.
Anthistiria andropogonoides Steud. Syn. Gram. 402. 1855.
Hyparrhenia foliosa Anderss.; Fourn. Mex. Pl. Gram. 67. 1881.
Sorgum bracteatum Kuntze, Rev. Gen. 791. 1891.

Perennial. Stems 1 m. tall or more, glabrous, or appressed-pubescent below the nodes, branched above; leaf-sheaths appressed-hirsute above, otherwise glabrous; blades 3–4 dm. long, 2–4 mm. wide, rigid, usually pubescent below, rarely glabrous; inflorescence up to 3 dm. long, narrow, the branches often nodding; spathes brown, acuminate, 2–2.5 cm. long, usually appressed-hirsute, rarely glabrous; racemes in pairs, 8–12 mm. long, on a common peduncle which is curved and tuberculate-setiferous at the apex, one raceme nearly sessile, the other on a peduncle about 2 mm. long, the dark-violet appendage 1.5–2 mm. long, a pair, or sometimes 2 pairs, of homogamous spikelets present in one raceme, wanting in the other; perfect sessile spikelet glabrous, 5–6.5 mm. long, including the densely barbed callus which is 1–1.5 mm. long, linear-oblong, the first scale chartaceous-herbaceous, 7-nerved, hispidulous at the apex, deeply sulcate, the second scale 3-nerved, the keel often running out into a mucro, the fourth scale bearing an awn 2–3 cm. long, the column pubescent with short brown hairs; pedicellate spikelet staminate, 5 mm. long, lanceolate, the first scale 7-nerved, acute, muticous or shortly awned, hispidulous above on the nerves, the second scale 3-nerved, retrorsely ciliate with long hairs.

TYPE LOCALITY; Cumana, Venezuela.
DISTRIBUTION: Mexico to Panama; St. Vincent; also in tropical South America.
ILLUSTRATION: Mart. Fl. Bras. 2^3: *pl. 64.*

37. **Andropogon Ruprechti** (Fourn.) Hack. in DC. Monog. Phan. **6**: 645. 1889.

Andropogon anthestirioides Rupr.; Galeotti, Bull. Acad. Brux. 9^2: 245; hyponym. 1842. Not *A. anthistirioides* Hochst. 1851.
Hyparrhenia Ruprechti Fourn. Mex. Pl. Gram. 67. 1881.
Sorgum Ruprechti Kuntze, Rev. Gen. 792. 1891.

Stems 1 m. tall or more, branched above; leaf-sheaths terete, keeled and usually hirsute above, rarely glabrous; blades 2–4 dm. long, 4–6 mm. wide, rough, puberulent; inflorescence 2–4 dm. long, the branches elongate; spathes 4–5 cm. long, sparsely pubescent, rarely glabrous; racemes erect, 2–2.5 cm. long, in pairs, one containing a single perfect spikelet, or rarely 2 spikelets, one raceme sessile, the other on a peduncle about 2 mm. long, the appendage about 5 mm. long; perfect sessile spikelet glabrous, 11 mm. long, including the callus which is about 4 mm. long, the first scale bi-mucronate at the apex, the fourth scale retrorsely ciliate, bearing an awn 5–7 cm. long, the column flexuous, pubescent with short hairs; pedicellate spikelet staminate, about 12 mm. long, the first scale with 5 nerves.

TYPE LOCALITY: Zacuapan, Vera Cruz.
DISTRIBUTION: Mexico and Guatemala.

DOUBTFUL SPECIES

Anatherum Berterianum Spreng.; Schultes, in R. & S. Syst. Veg. Mant. **2**: 443. 1824.
Andropogon elythrophyllus Steud. Syn. Gram. 378. 1854.

23. **AMPHILOPHIS** Nash, in Britton, Man. 71. 1901.

Perennial grasses with usually flat leaf-blades and showy often silvery-white panicles, the axis short, making the panicle appear fan-like, or elongate with the branches scattered. Racemes usually numerous, the internodes of the rachis and the pedicels with manifestly thickened margins, the median portion thin and translucent, the margins ciliate with usually long hairs. Spikelets in pairs, dorsally compressed. Sessile spikelet of 4 scales, perfect, or rarely the lower pair or pairs staminate or empty; first scale 2-keeled, the margins narrowly infolded; second scale 1-keeled; third scale hyaline; fourth scale stipe-like, the blade wanting, somewhat thickened, merging into a usually geniculate perfect, rarely imperfect, awn, or the awn rarely wanting. Pedicellate spikelet awnless, staminate and similar to the sessile one, or empty and smaller. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Andropogon Torreyanus* Steud.

Sessile spikelets in all pairs alike, perfect, awned, very rarely awnless.
- Pedicellate spikelet as wide and long as the sessile one, consisting of 3 or 4 scales, usually staminate, rarely empty.
  - Sessile spikelet 3–4 mm. long, the first scale appressed-pubescent below on the back. 1. *A. Ischaemum.*
  - Sessile spikelet more than 5 mm. long, the first scale glabrous, or very rarely with a few scattered hairs below.
    - Racemes erect, on peduncles usually 1 cm. long or less; awn of the sessile spikelet 1–1.5 cm. long. 2. *A. Wrightii.*
    - Racemes nodding, on peduncles usually 1–2.5 cm. long; awn of the sessile spikelet 2–2.5 cm. long. 3. *A. hirtifolius.*
- Pedicellate spikelet much narrower than the sessile one, and sometimes shorter, commonly empty and reduced to a single scale, or very rarely of 2 or 3 scales and staminate.
  - Hairs at the summit of the rachis-internodes more than one half as long as the sessile spikelet.
    - First scale of the sessile spikelet not pitted.
      - Sessile spikelet 3–4 mm. long; awn usually less than 1.5 cm. long; panicle oblong to oval-oblong, the axis elongate. 4. *A. saccharoides.*
      - Sessile spikelet 5 mm. long or more; awn more than 1.5 cm. long; panicle usually corymbiform or flabellate-digitate, the axis short. 5. *A. leucopogon.*
    - First scale of the sessile spikelet with a pit near the apex.
      - Leaves glabrous; rachis-internodes with the terminal hairs as long as themselves. 6. *A. emersus.*
      - Leaves velvety-pubescent; rachis-internodes with the terminal hairs one half their length. 7. *A. Palmeri.*
  - Hairs at the summit of the rachis-internodes less than one half the length of the sessile spikelet. 8. *A. Schlumbergeri.*

Sessile spikelet in the lower pair or pairs differing from those above, awnless, staminate or empty. 9. *A. piptatherus.*

1. **Amphilophis Ischaemum** (L.) Nash.

Andropogon Ischaemum L. Sp. Pl. 1047. 1753.
Andropogon Ischaemum americanus Hack. in DC. Monog. Phan. 6: 476. 1889.
Sorgum Ischaemum Kuntze, Rev. Gen. 792. 1891.

Stems 3–8 dm. tall, often barbed at the nodes, simple or sparingly branched above; leaves often glaucous; sheaths glabrous; blades 5–20 cm. long, up to 6 mm. broad, narrowly linear, usually with a few long hairs on the upper surface near the base, otherwise glabrous; racemes 4–10, rarely more, 4–8 cm. long, slender, lax, subflabellately arranged on a short axis; sessile spikelet 3–4 mm. long, oblong-elliptic, the first scale 7–9-nerved, the intercarinal space flat or nearly so, appressed-pubescent below, often with a pit-like depression near the apex, the second scale ciliate above on the keel, the fourth scale with a perfect awn 1–2 cm. long, the column straight or somewhat geniculate at the middle; pedicellate spikelet glabrous, staminate, lanceolate, usually colored, the first scale ciliate above on the keels, 9-nerved.

TYPE LOCALITY: India.
DISTRIBUTION: Introduced from Venezuela to Antigua and St. Croix; native of warm temperate and tropical regions of the Old World.
ILLUSTRATIONS: Host, Gram. Austr. 2: *pl. 2;* Sturm, Deuts. Fl. 52: *pl. 12;* Nees, Gen. Fl. Germ. *Andropogon.*

2. **Amphilophis Wrightii** (Hack.) Nash.

Andropogon Wrightii Hack. Flora 68: 139. 1885.
Sorgum Wrightii Kuntze, Rev. Gen. 792. 1891.

Stems up to 1 m. tall, simple, glaucous below the nodes; leaves glaucous; sheaths shorter than the internodes, glabrous; blades up to 2.5 dm. long, 4–6 mm. wide, rigid, smooth, glabrous; racemes subdigitately arranged in 3's–5's, 3–6 cm. long, the internodes of the rachis with the terminal hairs a little shorter than themselves; sessile spikelet 5.5–6 mm. long, the first scale with the margins involute below, narrowly infolded above, the intercarinal space glabrous, shining, 7-nerved, the nerves vanishing below the hyaline apex, sometimes with a pit-like depression above, the second scale 3-nerved, the keel and margins ciliate above, the fourth scale with a perfect awn 12–15 mm. long, the column straight; pedicellate spikelet equaling the sessile one, staminate, the first scale strongly 9-nerved, hispid on the margins above, otherwise glabrous.

TYPE LOCALITY: New Mexico.
DISTRIBUTION: New Mexico and Chihuahua.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 21;* Bull. U. S. Dep. Agr. Agrost. 17: *f. 320.*

3. **Amphilophis hirtifolius** (J. Presl) Nash.

Andropogon hirtifolius J. Presl, in Presl, Rel. Haenk. 1: 338. 1830.
Andropogon pubiflorus Fourn. Mex. Pl. Gram. 57. 1881.
Andropogon Schaffneri Griseb.; Fourn. Mex. Pl. Gram. 57. 1881.
Andropogon hirtifolius pubiflorus Hack. in DC. Monog. Phan. 6: 484. 1889.
Sorgum hirtifolium Kuntze, Rev. Gen. 792. 1891.

Stems up to 1 m. tall, simple, erect, or sometimes ascending at the base; leaf-sheaths glabrous, sometimes ciliate on the margins; blades up to 2 dm. long, 3–7 mm. wide, the uppermost one very short, rigid, flat, tuberculate-hirsute; racemes lax, subdigitately arranged in 3's–6's, 3–6 cm. long, the rachis-internodes 3–4 times as long as the terminal hairs; sessile spikelet 6–6.5 mm. long, oblong-elliptic, the first scale coriaceous, hispid on the keels, the intercarinal space little depressed, 7-nerved, sometimes with a pit-like depression above, the second scale chartaceous, 3-nerved, the fourth scale with a stout perfect awn 2–2.5 cm. long, the dark-purple column straight or curved; pedicellate spikelet staminate, equaling or exceeding the sessile one, linear-oblong, the first scale flat, 13–17-nerved, glabrous, excepting the hispidulous keels.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Central and southern Mexico.

4. **Amphilophis saccharoides** (Sw.) Nash.

Andropogon saccharoides Sw. Prodr. 26. 1788.
Andropogon argenteus DC. Cat. Hort. Monsp. 77. 1813.
Andropogon laguroides DC. Cat. Hort. Monsp. 78. 1813.
Andropogon barbinodis Lag. Gen. Sp. Pl. 3. 1816.
Andropogon glaucus Torr. Ann. Lyc. N. Y. 1: 153. 1824. Not *Andropogon glaucus* Retz. 1789.
Andropogon Torreyanus Steud. Nom. ed. 2. 1: 93. 1841.
Andropogon Jamesii Torr. in Marcy, Expl. 302. 1853.
Andropogon tenuirachis Fourn. Mex. Pl. Gram. 58. 1881.
Andropogon Kunthii Fourn. Mex. Pl. Gram. 59. 1881.
Andropogon saccharoides barbinodis Hack. in DC. Monog. Phan. 6: 494. 1889.
Andropogon saccharoides Torreyanus Hack. in DC. Monog. Phan. 6: 495. 1889.
Andropogon saccharoides submuticus Vasey; Hack. in DC. Monog. Phan. 6: 495. 1889. Not *Andropogon submuticus* Steud. 1854.
Andropogon saccharoides laguroides Hack. in DC. Monog. Phan. 6: 495. 1889.
Sorgum saccharoides Kuntze, Rev. Gen. 792. 1891.
Amphilophis Torreyanus Nash, in Britton, Man. 71. 1901.
Amphilophis exaristatus Nash, in Small, Fl. SE. U. S. 65. 1903.

A green or often glaucous perennial. Stems up to 1 m. tall, simple or branched, the nodes glabrous or barbed; leaf-sheaths glabrous, or rarely pubescent; blades up to 2.5 dm. long, 4–8 mm. wide, flat or convolute, usually rough and glabrous, long-attenuate at the apex; panicle oblong-linear, oblong, or oval-oblong, 5–11 cm. long, the racemes numerous, arranged on an elongate axis, the rachis-internodes with the terminal hairs 1–3 times their length; sessile spikelet 3–4 mm. long, lanceolate or linear-lanceolate, the first scale chartaceous or somewhat coriaceous, the margins narrowly infolded above, ciliate on the keels, the intercarinal space appressed-pubescent, at least below, 5–7-nerved, flat or slightly depressed, the second scale equaling the first, lanceolate, acute, 1-nerved, the fourth scale with a usually perfect awn 1–1.5 cm. long, or rarely very short and imperfect, very rarely awnless; pedicellate spikelet linear or linear-lanceolate, a little shorter than the sessile one, reduced to a single 7-nerved scale.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Missouri to Colorado, south to Texas and Arizona, Mexico, and Central America; Jamaica; also in northern South America.
ILLUSTRATIONS: Jacq. f. Ecl. Gram. *pl. 5;* Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 20;* Britt. & Brown, Ill. Fl. *f. 223;* Bull. U. S. Dep. Agr. Agrost. 7: *f. 8.*

5. **Amphilophis leucopogon** (Nees) Nash.

Andropogon leucopogon Nees, Linnaea 19: 694. 1847.
? *Eulalia mexicana* Steud. Syn. Gram. 412. 1855.
Andropogon saccharoides leucopogon Hack. in DC. Monog. Phan. 6: 496. 1889.
Andropogon saccharoides leucopogon paucirameus Hack. in DC. Monog. Phan. 6: 497. 1889.
Amphilophis barbinodis Nash, in Small, Fl. SE. U. S. 65. 1903.

Stems tufted, stout, 5–10 dm. tall, simple or branched, the nodes densely barbed; leaf-sheaths smooth and glabrous; blades up to 3 dm. long, 2–8 mm. wide, rough, firm, glabrous; panicle broadly oblong, ovate, oval, or obovate, 5–12 cm. long; racemes 6–many, arranged subdigitately or somewhat flabellately on a short axis, the longer ones 4–6 cm. long, the lower usually equaling or exceeding one half the length of the panicle, the rachis-internodes with the terminal hairs about as long as the spikelets; sessile spikelet 5–6 mm. long, about one half as long again as the internodes, the awn perfect, 2–3 cm. long, the column much exserted; pedicellate spikelet of a single awnless scale 4–5 mm. long.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Western Texas to southern California and in northern and central Mexico; also a slender form in Cuba, Haïti, and Colombia.

6. **Amphilophis emersus** (Fourn.) Nash.

Andropogon emersus Fourn. Mex. Pl. Gram. 58. 1881.
Andropogon perforatus Trin.; Fourn. Mex. Pl.Gram. 59. 1881.
Amphilophis perforatus Nash, in Small, Fl. SE. U. S. 66. 1903.

Stems tufted, rather stout, 5–10 dm. tall, the nodes barbed; leaf-sheaths smooth and glabrous; blades 2 dm. long or less, 2–4 mm. wide, the upper surface sometimes pubescent with long hairs near the base; panicle 5–10 cm. long, subflabellate; racemes 5–8, 5–6 cm. long, the rachis-internodes with the terminal hairs about as long as the internodes; sessile spikelet 5–5.5 mm. long, rarely 4 mm., the first scale lightly sulcate on the back and with a deep pit-like depression above the middle, the fourth scale with a geniculate awn 2–2.5 cm. long, the column much exserted; pedicellate spikelet of a single awnless scale about 3 mm. long.

TYPE LOCALITY: Orizaba, Vera Cruz.
DISTRIBUTION: Western Texas and Mexico.

7. **Amphilophis Palmeri** (Hack.) Nash, sp. nov.

? *Andropogon hirsutus* H.B.K. Nov. Gen. & Sp. 1: 186. 1816.
Andropogon saccharoides leucopogon Palmeri Hack. in DC. Monog. Phan. 6: 496. 1889.

Stems up to 8 dm. tall, the nodes densely barbed; leaf-sheaths densely hirsute toward the apex, otherwise glabrous or sparingly hirsute; blades 2 dm. long or less, 3–6 mm. wide, densely hirsute on both surfaces; panicle flabellate, 5–6 cm. long, the rachis-internodes of the racemes with the terminal hairs about one half as long as the sessile spikelets; sessile spikelet 5.5–6.5 mm. long, the first scale slightly sulcate on the back and with a deep pit-like depression above the middle, the fourth scale with a geniculate awn 2–2.5 cm. long, the column much exserted; pedicellate spikelet of a single linear acute scale 4–5 mm. long.

TYPE LOCALITY: Rio Blanco, near Guadalajara, Jalisco.
DISTRIBUTION: Known only from the type locality.

8. **Amphilophis Schlumbergeri** (Fourn.) Nash.

Andropogon Schlumbergeri Fourn. Mex. Pl. Gram. 59. 1881.
? *Andropogon Schlumbergeri Andreae* Hack. in DC. Monog. Phan. 6: 498. 1889.
Sorgum Schlumbergeri Kuntze, Rev. Gen. 792. 1891.

Stems up to 12 dm. tall, stout, densely barbed at the nodes; leaf-sheaths smooth and glabrous; blades up to 3 dm. long, 3–8 mm. wide, long-attenuate at the apex, sparingly tuberculate-hispid; panicle 10–12 cm. long; racemes 5–6 cm. long, arranged in a subdigitate manner, the rachis-internodes with the terminal hairs usually not exceeding one quarter the length of the sessile spikelets; sessile spikelet 5–6 mm. long, the first scale coriaceous-chartaceous,

7-nerved, with the keels hispid above, otherwise glabrous, the intercarinal space depressed in the center and sometimes with a deep pit-like depression above the middle, the second scale equaling the first, 3-nerved, the awn of the fourth scale perfect, 1.5–2 cm. long, the column often geniculate or curved, much exserted; pedicellate spikelet usually reduced to a single scale about 3 mm. long.

TYPE LOCALITY: Orizaba, Vera Cruz.
DISTRIBUTION: Known only from the type locality.

9. **Amphilophis piptatherus** (Hack.) Nash.

Andropogon piptatherus Hack. in Mart. Fl. Bras. 2³: 293. 1883.
Andropogon piptatherus Palmeri Hack. in DC. Monog. Phan. 6: 580. 1889.
Sorgum piptatherum Kuntze, Rev. Gen. 792. 1891.

Annual. Stems 3–10 dm. tall, barbed at the nodes, branched; leaf-sheaths glabrous or pubescent toward the apex; blades up to 2.5 dm. long, 3–10 mm. wide, lax, usually rough, often pubescent; racemes numerous and in a corymbiform panicle 2–3 cm. long, or in 2's–10's, rarely solitary, on peduncles 5–20 mm. long, lax, the internodes of the rachis and pedicels shorter than the sessile spikelets, flat, much compressed, ciliate on the thickened margins, with a broad median hyaline line; sessile spikelet 3–4 mm. long, the first scale membranous, oblong, very obtuse, ciliate on the keels, 5–7-nerved, pilose below on the back, the second scale equaling the first, keeled, glabrous; fourth scale with an awn 2.5–3.5 cm. long; pedicellate spikelet empty, 5–6 mm. long, lanceolate-oblong, the first scale flat, 12–17-nerved, pilose below.

TYPE LOCALITY: Porto Imperial, Goyaz, Brazil.
DISTRIBUTION: Central and southern Mexico; also in tropical South America and Africa.

24. **HETEROPOGON** Pers. Syn. Pl. 2: 533. 1807.

Annual or perennial grasses, sometimes tall, with narrow leaf-blades, and spike-like racemes borne singly at the apex of the stem and its branches, the lower pairs of spikelets differing from those above in sex and awns. Spikelets 1-flowered, in pairs at the rachis-nodes, one sessile, staminate or empty in the lower pair or pairs, pistillate or perfect in the remaining pairs, the other pedicellate, containing a staminate flower, or empty. Sessile spikelet of 4 scales; first scale firm, convolute, awnless; second scale thinner, keeled; third scale very thin, hyaline; fourth scale enclosing the flower, small and hyaline, bearing a long rigid contorted perfect awn. Pedicellate spikelet awnless, differing much in appearance from the perfect sessile spikelet, not convolute. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Andropogon Allionii* DC.

Upper sheaths along the keel and the first scale of the pedicellate spikelet on the midnerve tuberculate, the latter 1.5 cm. long or more, glabrous. 1. *H. melanocarpus.*
Upper sheaths and the first scale of the pedicellate spikelet smooth, the latter 1 cm. long or less, papillose-hispid toward the summit and near the margins. 2. *H. contortus.*

1. **Heteropogon melanocarpus** (Muhl.) Ell.; Benth. Jour. Linn. Soc. **19**: 71. 1881.

Stipa melanocarpa Muhl. Cat. 13. 1813; Descr. Gram. 183. 1817.
Andropogon melanocarpus Ell. Bot. S. C. & Ga. **1**: 146. 1816.
Cymbopogon melanocarpus Spreng. Syst. 1: 289. 1825.
Trachypogon scrobiculatus Nees, Agrost. Bras. 347. 1829.
Heteropogon acuminatus Trin. Mém. Acad. St. Petersb. VI. **2**: 254. 1832.
Andropogon scrobiculatus Kunth, Enum. **1**: 507. 1833.
Heteropogon scrobiculatus Fourn. Mex. Pl. Gram. 64. 1881.
Sorgum melanocarpum Kuntze, Rev. Gen. 792. 1891.

Annual. Stems 4–15 dm. tall, much branched above; leaf-sheaths, at least the upper ones, tuberculate on the keel; blades 5 dm. long or less, 3–12 mm. wide; racemes 3–6 cm. long, exserted, or included at the base, the peduncles pilose with ascending hairs, the internodes between the upper spikelets densely pubescent with long chestnut-brown hairs; pistillate sessile spikelet 5–6 mm. long, the awn 9–15 cm. long; pedicellate spikelet 1.5–2.5 cm. long, empty or staminate, the first scale long-acuminate, tuberculate on the midnerve.

TYPE LOCALITY: Georgia.
DISTRIBUTION: South Carolina to Florida, Arizona, and Mexico, and in tropical America.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 17: *f. 323*.

2. **Heteropogon contortus** (L.) Beauv.; R. & S. Syst. Veg. **2**: 836. 1817.

Andropogon contortus L. Sp. Pl. 1045. 1753.
Heteropogon hirtus Pers. Syn. Pl. **2**: 533. 1807.
Andropogon Allionii H.B.K. Nov. Gen. & Sp. 1: 185. 1816. Not *A. Allionii* DC. 1805.
Andropogon secundus Willd.; Nees, Agrost. Bras. 364. 1829.
Heteropogon firmus J. Presl, in Presl, Rel. Haenk. 1: 334. 1830.
Andropogon firmus Kunth, Enum. **1**: 486. 1833.
Sorgum contortum Kuntze, Rev. Gen. 791. 1891.

Perennial. Stems 2–8 dm. tall, rather sparingly branched above; leaf-sheaths smooth, even on the keel; blades 2 dm. long or less, 3–7 mm. wide; racemes 4–7 cm. long, exserted or included at the base, the peduncles hispidulous, the internodes between the upper spikelets densely pubescent with long nearly appressed chestnut-brown hairs; pistillate sessile spikelet 8–10 mm. long, including the brown-barbed callus which is about 3 mm. long, the awn 4.5–12 cm. long; pedicellate spikelet about 1 cm. long, empty or staminate, the first scale acute, papillose-hispid with long hairs toward the summit and near the margins.

TYPE LOCALITY: India.
DISTRIBUTION: Texas to Arizona and Honduras, and widely distributed in warm temperate and tropical regions generally.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 322;* All. Fl. Ped. *pl. 91, f. 4;* Nees, Gen. Fl. Germ. *Heteropogon;* Beauv. Agrost. *pl. 23, f. 8* (as *Heteropogon glaber*); Bull. U. S. Dep. Agr. Bot. 12^1: *pl. 16.*

25. **SORGHASTRUM** Nash, in Britton, Man. 71. 1901.

Poranthera Raf. Bull. Bot. Seringe 221. 1830. Not *Poranthera* Rudge, 1811.

Usually tall perennial grasses, with simple stems, flat leaf-blades, and terminal decompound panicles, with the primary branches usually solitary, or in pairs, and branched from the base, hence appearing as if whorled. Spikelets single and sessile, or rarely 2, the second rudimentary, pedicellate. Sessile spikelet dorsally compressed, of 4 scales, the 2 outer indurated, often hairy, the third and fourth scales hyaline, the latter awned, the awn usually perfect, rarely imperfect. Pedicellate spikelet wanting, or very rarely present as a minute rudiment, usually only the hairy pedicels present. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Andropogon avenaceus* Michx.

Awn imperfect, or if loosely spiral at the base the exserted portion not longer than the spikelet. 1. *S. setosum.*
Awn perfect, a plurispiral well developed column at the base, the exserted portion longer than the spikelet.
  Awn three times as long as the spikelet or less, the column straight, rarely geniculate.
    Panicles small, the branches with a long naked base; spikelets few, at the end of the branches or their divisions; innovations with leaf-blades 3–6 cm. long. 2. *S. nudipes.*
    Panicles ample; spikelets numerous; innovations with elongate leaf-blades.
      Spikelets 4.5–5 mm. long. 3. *S. stipoides.*
      Spikelets 6–8 mm. long. 4. *S. nutans.*
  Awn 4–5 times as long as the spikelet, the column distinctly geniculate.
    Spikelets 4 mm. long. 5. *S. incompletum.*
    Spikelets 6–7 mm. long.
      Peduncles straight or nearly so below the spikelets which are usually a deep chestnut-brown when mature. 6. *S. Elliottii.*
      Peduncles strongly recurved or coiled below the spikelets which are usually pale-brown when mature. 7. *S. secundum.*

1. **Sorghastrum setosum** (Griseb.) Hitchc. Contr. U. S. Nat. Herb. **12**: 195. 1909.

Andropogon setosus Griseb. Cat. Pl. Cub. 235. 1866.
Andropogon Francavillanus Fourn. Mex. Pl. Gram. 56. 1881.
Sorgum nutans micranthum genuinum Hack. in Mart. Fl. Bras. 2^3: 274. 1883.
Sorgum nutans micranthum submuticum Hack. in Mart. Fl. Bras. 2^3: 275. 1883.
Andropogon agrostoides Speg. Anal. Soc. Ci. Argent. 16: 136. 1883.
Andropogon nutans agrostoides Hack. in DC. Monog. Phan. 6: 529. 1889.
Andropogon nutans submuticus Hack. in DC. Monog. Phan. 6: 529. 1889.
Sorghastrum Francavillanum Hitchc. Contr. U. S. Nat. Herb. 12: 195. 1909.
Sorghastrum agrostoides Hitch. Bot. Gaz. 51: 300. 1911.

Stems 1 m. tall or more, glabrous, with the exception of the usually barbed nodes; leaf-sheaths glabrous, rarely hirsute at the apex; blades up to 5 dm. long and 7 mm. wide, involute or flat, glabrous; panicle 1–2 dm. long, oblong to oblong-linear; spikelets 3.5–5 mm. long, usually yellowish-brown, hirsute, the awn imperfect, 1–3 mm. long, or perfect, the exserted portion not longer than the spikelet.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Continental tropical America, Jamaica, Cuba, and Haïti.

2. **Sorghastrum nudipes** Nash, sp. nov.

A slender tufted grass, with short extravaginal innovations, the leaf-blades of which are 3–6 cm. long. Stems 6–8 dm. tall, smooth and glabrous; leaf-sheaths smooth and glabrous; blades erect, up to 1.5 dm. long, 3–5 mm. wide, flat, glabrous, usually rough; panicle 8–12 cm. long, loose and open, broad, the capillary branches and their divisions naked below the middle, the few spikelets borne at their ends; spikelets 6–7 mm. long, hirsute, the perfect awn 1–1.5 cm. long, the straight, or sometimes geniculate, column much exserted.

Type collected on pine plains, base of the Sierra Madre, Chihuahua, Mexico, September 18, 1887, *C. G. Pringle 1433* (herb. Columbia Univ.).
DISTRIBUTION: Chihuahua.

3. **Sorghastrum stipoides** (H.B.K.) Nash.

Andropogon stipoides H.B.K. Nov. Gen. & Sp. 1: 189. 1816.
?*Sorgum parviflorum* Desv.; Hamilt. Prodr. 12. 1825.
Andropogon Humboldtianus Steud. Syn. Gram. 392. 1854.
?*Andropogon rufidulus* Steud. Syn. Gram. 392. 1854.
Sorgum nutans avenaceum stipoides Hack. in Mart. Fl. Bras. 2^3: 274. 1883.
Andropogon nutans stipoides Hack. in DC. Monog. Phan. 6: 530. 1889.

Stems up to 1.5 m. tall; leaf-sheaths smooth and glabrous; blades up to 4 dm. long, 2–5 mm. wide, usually convolute, rarely flat, glabrous or pubescent; panicle 1–3 dm. long, usually loose and open, rarely contracted; spikelets about 5 mm. long, hirsute, the awn of the fourth scale 1–1.5 cm. long, the straight, very rarely geniculate, column commonly much exserted.

TYPE LOCALITY: Between Popayan and Almaguer, near Rio Putes, at the foot of Mt. Socobon, Colombia.
DISTRIBUTION: Cuba; Mexico; also in northern South America.

4. **Sorghastrum nutans** (L.) Nash, in Small, Fl. SE. U. S. 66. 1903.

Andropogon nutans L. Sp. Pl. 1045. 1753.
?*Stipa villosa* Walt. Fl. Car. 78. 1788.
Andropogon avenaceus Michx. Fl. Bor. Am. 1: 58. 1803.
Andropogon ciliatus Ell. Bot. S. C. & Ga. 1: 144. 1816.
Sorgum nutans A. Gray, Man. 617. 1848.
Sorgum avenaceum Chapm. Fl. S. U. S. 583. 1860.
Andropogon confertus Trin.; Fourn. Mex. Pl. Gram. 55. 1881.
?*Andropogon albescens* Fourn. Mex. Pl. Gram. 56. 1881.
Chrysopogon nutans Benth.; Vasey, Grasses U. S. 20. 1883.
Chrysopogon avenaceus Benth.; Vasey, Grasses U. S. 20. 1883.
Andropogon nutans avenaceus Hack. in DC. Monog. Phan. 6: 530. 1889.
Sorghastrum avenaceum Nash, in Britton, Man. 71. 1901.

Stems 1–2.5 m. tall; leaf-sheaths usually smooth and glabrous, or the lowermost ones sometimes pubescent; blades 6 dm. long or less, up to 15 mm. wide, rough; panicle 2–5 dm. long, loose, the apex usually nodding, its branches erect or nearly so, at least the lower ones much exceeding the internodes of the axis, 7–10 cm. long, the ultimate divisions straight; spikelets 6–8 mm. long, lanceolate, golden-brown at maturity, hirsute, the awn of the fourth scale geniculate, 1–1.5 cm. long, the column straight, usually not or but little exserted.

TYPE LOCALITY: Virginia.
DISTRIBUTION: Rhode Island to Ontario, Manitoba, and South Dakota, and southward to Florida, Arizona, and northern Mexico; also in South America.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 28*; ed. 2. *pl. 30*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 15*; Bull. Tenn. Exp. Sta. 5: *f. 4*; 7: *pl. 3, f. 12*; Britt. & Brown, Ill. Fl. *f. 224*; Bull. U. S. Dep. Agr. Bot. 1: *pl. 7*; 6: *pl. 9*; Rep. Sec. Agr. 1892: Bot. *pl. 4*; Circ. U. S. Dep. Agr. Agrost. 4: *f. 4*.

5. **Sorghastrum incompletum** (J. Presl) Nash.

Andropogon incompletus J. Presl, in Presl, Rel. Haenk. 1: 342. 1830.
Andropogon Galeottii Fourn. Mex. Pl. Gram. 56. 1881.

Stems 8–12 dm. tall, slender; leaf-sheaths glabrous; blades 1–3 dm. long, 3–7 mm. wide, usually flat, rough; panicle 1–3 dm. long, usually narrow and dense, rarely diffuse and broad; spikelets 4 mm. long, hirsute, the perfect awn 2–3 cm. long, the column several times longer than the spikelet and geniculate.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Mexico to Costa Rica.

6. **Sorghastrum Elliottii** (C. Mohr) Nash.

Andropogon nutans Ell. Bot. S. C. & Ga. 1: 144. 1816. Not *A. nutans* L. 1753.
Sorgum nutans Chapm. Fl. S. U. S. 583. 1860. Not *S. nutans* A. Gray, 1848.
Sorgum nutans Linnaeanum Hack. in Mart. Fl. Bras. 2^3: 276. 1883.
Andropogon nutans Linnaeanus Hack. in DC. Monog. Phan. 6: 531. 1889.
Chrysopogon Elliottii C. Mohr, Bull. Torrey Club 24: 21. 1897.
Chrysopogon nutans Linnaeanus C. Mohr, Bull. Torrey Club 24: 21. 1897.
Andropogon Linnaeanus Scribn. & Kearney; Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. 24: 40. 1901.
Sorghastrum Linnaeanum Nash, in Small, Fl. SE. U. S. 66. 1903.

Stems 1–1.5 m. tall; leaf-sheaths smooth and glabrous; blades 4 dm. long or less, up to 1 cm. wide, very rough; panicle 1.5–3 dm. long, the apex usually nodding, its branches erect or nearly so, at least the lower ones much exceeding the internodes of the axis, 6–8 cm. long, the ultimate divisions straight; spikelets 5.5–7.5 mm. long, lanceolate, deep chestnut-brown at maturity, hirsute, the awn 2.5–3.5 cm. long, the column geniculate, several times longer than the spikelet.

TYPE LOCALITY: South Carolina.
DISTRIBUTION: Virginia and Tennessee to Florida and Mexico.
ILLUSTRATION: Bull. Tenn. Exp. Sta. 7: *pl. 4, f. 13*.

7. **Sorghastrum secundum** (Ell.) Nash, in Small, Fl. SE. U. S. 67. 1903.

Andropogon secundus Ell. Bot. S. C. & Ga. 1: 580. 1821.
Sorgum secundum Chapm. Fl. S. U. S. 583. 1860.
Chrysopogon secundus Benth.; Vasey, Grasses U. S. 20. 1883.
Andropogon unilateralis Hack. in DC. Monog. Phan. 6: 533. 1889.

Stems 8–14 dm. tall; leaf-sheaths smooth and glabrous; blades 6 dm. long or less, up to 7 mm. wide, smooth beneath, rough above, often involute; panicle 2–4 dm. long, 1-sided, its branches erect or nearly so, rarely exceeding 4 cm. in length, usually shorter than the internodes of the axis, the ultimate divisions or peduncles strongly recurved or coiled below the spikelets; spikelets 6–8 mm. long, lanceolate, golden-brown at maturity, hirsute, the awn of the fourth scale 2.5–3 cm. long, the geniculate column several times longer than the spikelet.

TYPE LOCALITY: High ridges between the Flint and Chattahoochee rivers, Georgia.
DISTRIBUTION: South Carolina to Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 7: *f. 16*.

26. **HOLCUS** L. Sp. Pl. 1047. 1753.

Sorgum Adans. Fam. Pl. 2: 38. 1763.
Blumenbachia Koeler, Descr. Gram. 28. 1802.

Tall grasses, with broad flat leaf-blades, and large terminal usually decompound, rarely compound, panicles, the short racemes, of 1–few internodes, terminating the primary or secondary branches. Racemes with the rachis readily or tardily disarticulating, the internodes and pedicels linear, filiform, flat or convex on the back, not sulcate, ciliate on the margins, the internodes when disarticulated without appendages at the apex. Spikelets dorsally compressed in pairs, one sessile, the other pedicellate. Sessile spikelet perfect, the first scale coriaceous, its margin narrowly infolded above, involute below, finally shining, convex on the back; second scale of similar texture; third scale hyaline; fourth scale oblong or linear, 2-toothed at the apex, the perfect awn arising from between the teeth, rarely entire and mucronate or muticous.

Pedicellate spikelet staminate or empty, awnless. Stamens 3, very rarely 2. Ovary glabrous, or very rarely pilose. Stigmas linear-oblong, commonly equaling the styles.

Type species, *Holcus Sorghum* L.

Branches of the panicle divided; pubescence of the inflorescence white.
- Rachis of the racemes at length readily disarticulating; pedicellate spikelet usually staminate, equaling the sessile. 1. *H. halepensis.*
- Rachis of the racemes continuous or tardily disarticulating; pedicellate spikelet usually empty, shorter than the sessile one. 2. *H. Sorghum.*

Branches of the panicle simple or nearly so; pubescence of the inflorescence brown or purple. 3. *H. trichocladus.*

1. **Holcus halepensis** L. Sp. Pl. 1047. 1753.

Blumenbachia halepensis Koeler, Descr. Gram. 29. 1802.
Andropogon halepensis Brot. Fl. Lusit. 1: 89. 1804.
Sorgum halepense Pers. Syn. Pl. 1: 101. 1805.
Andropogon avenaceus H.B.K. Nov. Gen. & Sp. 1: 189. 1816. Not *A. avenaceus* Michx. 1803.
Andropogon Sorghum halepensis Hack. in DC. Monog. Phan. 6: 501. 1889.

Smooth and glabrous. Stems 5–15 dm. tall, from a long rootstock; leaf-blades 5 dm. long or less, up to 3 cm. wide; panicle 1.5–5 dm. long, oblong to oval, its branches ascending, the longer ones 7–14 cm. long; sessile spikelet 4.5–5.5 mm. long, ovate, the outer 2 scales densely appressed-pubescent with silky hairs, the first scale 3-toothed at the apex, the readily deciduous awn of the fourth scale 1–1.5 cm. long, the spiral column much exserted; pedicellate spikelet 5–7 mm. long, lanceolate, the 2 outer scales sparingly pubescent.

TYPE LOCALITY: Syria.
DISTRIBUTION: New Jersey to California, and south to Florida, Texas, and Costa Rica, in Bermuda and Cuba, and generally throughout warm temperate and tropical regions.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 29;* ed. 2. *pl. 31;* Bull. U. S. Dep. Agr. Agrost. 17: *f. 321;* Bull. Tenn. Exp. Sta. 5: *f. 6;* 7: *pl. 4, f. 14;* Britt. & Brown, Ill. Fl. *f. 225;* Schreb. Beschr. Gräs. *pl. 18;* Host, Gram. Austr. 1: *pl. 1;* Bull. U. S. Dep. Agr. Bot. 3: *pl. 5;* Field Columb. Mus. Publ. Bot. 3: 21, *f.*

2. **Holcus Sorghum** L. Sp. Pl. 1047. 1753.

Andropogon Sorghum Brot. Fl. Lusit. 1: 88. 1804.
Sorgum vulgare Pers. Syn. Pl. 1: 101. 1805.
Andropogon Drummondii Steud. Syn. Gram. 393. 1854.
Sorgum Sorghum Karst. Deuts. Fl. 367. 1881.
Andropogon Sorghum sativus Drummondii Hack. in DC. Monog. Phan. 6: 507. 1889.
Andropogon Sorghum sativus vulgaris Hack. in DC. Monog. Phan. 6: 515. 1889.
Sorgum Drummondii Nees; (Steud. Syn. Gram. 393, as synonym. 1854) Millsp. & Chase, Field Columb. Mus. Publ. Bot. 3: 21. 1903.

A tall variable annual, with dense or lax panicle, the rachis of the racemes tardily disarticulating, the pedicellate spikelets usually empty, or very rarely staminate, shorter than the sessile. Stems up to 1.5 m. tall, simple or branched; leaf-sheaths glabrous or pubescent, shorter than the internodes; blades up to 6 dm. long and 1–7 cm. wide, flat, undulate on the margins, drooping at the apex, long-acuminate; panicle up to 3 dm. long, its branches erect or more or less spreading; sessile spikelet ovate-lanceolate, elliptic-lanceolate, or obovate, 5–6 mm. long, 2.5–3.5 mm. broad, the first scale more or less pubescent, the fourth scale usually 2-lobed or 2-toothed at the apex, bearing a perfect awn 4–10 mm. long; pedicellate spikelet with the pedicel one half as long as the sessile spikelet or less.

TYPE LOCALITY: India.
DISTRIBUTION: Widely cultivated in all warm temperate and tropical regions, and often escaping. An extremely variable grass.
ILLUSTRATIONS: Host, Gram. Austr. 4: *pl. 2;* Nees, Gen. Fl. Germ. *Sorghum f. 21–21b;* Descourt. Fl. Ant. *pl. 541;* Field Columb. Mus. Publ. Bot. 3: 22, *ff.*

3. **Holcus trichocladus** (Rupr.) Nash.

Andropogon trichocladus Rupr.; Hack. in DC. Monog. Phan. 6: 525. 1889.
Sorgum trichocladum Kuntze, Rev. Gen. 792. 1891.

Stems 1–1.5 m. tall, densely barbed at the nodes; leaf-sheaths glabrous, except at the usually pubescent apex; blades lanceolate-linear, up to 4 dm. long and 1 cm. wide, acuminate, softly pubescent on both surfaces; panicle 1–2 dm. long, the smooth flexuous branches in 4's–10's, about equal in length, capillary; racemes of 5–several internodes, pubescent with golden-brown hairs, the internodes and pedicels exceeding one half the length of the sessile

spikelets, glabrous on the face, the back and margins copiously pubescent with golden-brown hairs; sessile spikelet brown-purple, about 5 mm. long, oblong, the first scale emarginate at the somewhat hyaline truncate apex, strigose on the back with brown hairs, the second scale as long as the first, obtuse, setose above, the third scale ciliate, the fourth scale acutely 2-toothed for about one third its length, bearing a rather stout perfect awn 1.5–2 cm. long, the brown column straight, glabrous, about equaling the nearly straight subula; pedicellate spikelet reduced to a single narrowly linear scale which is glabrous and obtuse.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Mexico.

27. **VETIVERIA** Thouars; Virey, Jour. de Pharm. **13**: 501. 1827.

Mandelorna Steud. Syn. Gram. 359. 1854.

Tall grasses with simple stems, narrow leaf-blades, and terminal panicles with the branches usually with many internodes and disposed in dense whorls. Spikelets in pairs, narrow, acute, of 4 scales, the one sessile and perfect, the other pedicellate and staminate. Sessile spikelet laterally compressed; first scale coriaceous or chartaceous, the margins inflexed or involute; second scale awned or awnless; third and fourth scales hyaline, the latter entire or shortly 2-toothed, muticous, mucronate, or short-awned from between the teeth. Pedicellate spikelet usually awnless, rarely awned. Stamens 3. Ovary glabrous. Stigmas plumose, linear, 2–4 times as long as the styles.

Type species, *Vetiveria odorata* Virey.

1. **Vetiveria zizanioides** (L.) Nash, in Small, Fl. SE. U. S. 67. 1903.

Phalaris zizanioides L. Mant. 183. 1771.
Andropogon squarrosus L. f. Suppl. 433. 1781.
Andropogon muricatus Retz. Obs. **3**: 43. 1783.
Vetiveria odorata Virey, Jour. de Pharm. **13**: 501. 1827.
Mandelorna insignis Steud. Syn. Gram. 359. 1854.
Vetiveria arundinacea Griseb. Fl. Brit. W. Ind. 559. 1864.
Sorgum zizanioides Kuntze, Rev. Gen. 791. 1891.

Stems 2 m. tall or more; leaf-sheaths smooth and glabrous; blades 9 dm. long or less, 4–10 mm. wide; panicle 2–3 dm. long, its slender ascending or nearly erect branches in dense whorls, readily disarticulating at the nodes, and with a long naked base; sessile spikelet about 4 mm. long, about as long as the internodes, the first scale minutely tuberculate-roughened, 2-keeled, the keels muricate, the second scale 1-nerved, the keel muricate, the fourth scale awnless or short-awned, the awn not exserted; pedicellate spikelet about as long as or a little shorter than the sessile one, sparingly muricate.

TYPE LOCALITY: India.
DISTRIBUTION: Escaped from cultivation in Louisiana, Jamaica, Porto Rico, Guadeloupe, and Martinique, and in other parts of tropical America and elsewhere in tropical regions.

28. **CHRYSOPOGON** Trin. Fund. Agrost. 187. 1820.

Perennial or rarely annual grasses, with narrow leaf-blades, and terminal panicles, the branches usually bearing terminal clusters of 3 spikelets, or very rarely with a pair below, one spikelet sessile and perfect, the other 2 pedicellate, staminate or empty. Sessile spikelet laterally compressed, of 4 scales, the first and second scales involute, gaping at maturity, the third and fourth scales hyaline, the fourth with a perfect awn. Pedicellate spikelets dorsally compressed, awnless or awned. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Andropogon Gryllus* L.

1. **Chrysopogon pauciflorus** (Chapm.) Benth.; Vasey, Grasses U. S. 20. 1883.

Sorgum pauciflorum Chapm. Bot. Gaz. **3**: 20. 1878.
Chrysopogon Wrightii Munro; Vasey, Descr. Cat. Grasses U. S. 29. 1885.
Andropogon pauciflorus Hack. in DC. Monog. Phan. **6**: 548. 1889.
Rhaphis pauciflorus Nash, in Small, Fl. SE. U. S. 67. 1903.

Annual. Stems 6–12 dm. tall, simple or somewhat branched; leaf-blades 2 dm. long or less, 2–10 mm. wide, papillose-hirsute above; panicle 2–3 dm. long, its branches erect or

ascending, slender, the lower in whorls of 2–5, rarely divided, the longer, exclusive of the spikelets and awn, 5–8 cm. long; sessile spikelet laterally compressed, about 1.5 cm. long, including the callus which is 6–7 mm. long and densely barbed, the first and second scales dark-brown, shining and coriaceous at maturity, hispidulous at the apex, the fourth scale with a flexuous more or less contorted usually geniculate perfect awn 14–16 cm. long; pedicellate spikelets 10–12 mm. long, on slender glabrous pedicels about reaching the apex of the sessile spikelet, empty or containing a staminate flower.

TYPE LOCALITY: Sandy pine barrens, near Jacksonville, Florida.
DISTRIBUTION: Florida and Cuba.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 7: *f. 17.*

29. **THEMEDA** Forsk. Fl. Aegypt.-Arab. 178. 1775.

Anthistiria L. f. (Nov. Gram. Gen. 35; hyponym. 1779) Suppl. 113. 1781.
Androscepia Brongn. in Duperrey, Voy. Coq. Bot. Phan. 77. 1831.

Usually tall perennial grasses with leafy panicles composed of short thick racemes of 7–11 spikelets, the peduncles of which are commonly included in the subtending spathe. Spikelets of 3 kinds: involucral, pedicellate, and sessile. Involucral spikelets in 2 pairs at the base of the raceme, usually apparently arising from the same place, or sometimes the pairs measurably distant, containing from 1–3 scales, and either empty or enclosing staminate flowers. Pedicellate spikelets 2–several, composed of 1–3 scales, and either empty or enclosing staminate flowers. Sessile spikelets of 4 scales; first scale usually indurated in fruit; second scale of similar texture to the first; third scale hyaline; fourth scale also hyaline, enclosing a perfect flower, and usually bearing a perfect awn, rarely muticous or with an imperfect awn. Stamens 3. Stigmas exserted near the middle or apex of the spikelet.

Type species, *Themeda triandra* Forsk.

Involucral and pedicellate spikelets each consisting of 1 scale, without flowers. 1. *T. arguens.*
Involucral and pedicellate spikelets each consisting of 3 scales, usually with staminate flowers. 2. *T. quadrivalvis.*

1. **Themeda arguens** (L.) Hack. in DC. Monog. Phan. 6: 657. 1889.

Stipa arguens L. Sp. Pl. ed. 2. 117. 1762.
Anthistiria arguens Willd. Sp. Pl. 4: 901. 1806.

Annual. Stems up to 3 m. tall; leaf-sheaths glabrous or hairy; blades up to 4 dm. long, 3–6 mm. wide, glabrous or sometimes hairy at the base; panicle occupying usually less than one half of the stem; spathes 3–4 cm. long, long-attenuate at the apex, usually more or less hirsute; involucral spikelets 7–10 mm. long, the first scale acuminate or cuspidate; pedicellate spikelets subulate, similar to the involucral; sessile spikelets 9–11 mm. long, including the pungent callus which is 3–4 mm. long and densely barbed with brown hairs, the first scale hispidulous above, the fourth scale with an awn 5–9 cm. long.

TYPE LOCALITY: India.
DISTRIBUTION: Introduced into Jamaica. Native from Malacca to northern Australia.
ILLUSTRATION: Rumph. Amb. 6: *pl. 6, f. 1.*

2. **Themeda quadrivalvis** (L.) Kuntze, Rev. Gen. 794. 1891.

Andropogon nutans L. Mant. 303. 1771. Not *A. nutans* L. 1753.
Andropogon quadrivalvis L. Syst. Veg. ed. 13. 758. 1774.
Anthistiria ciliata L. f. Suppl. 113. 1781.
Themeda ciliata Hack. in DC. Monog. Phan. 6: 664. 1889.

Annual. Stems up to 1 m. or more tall; leaf-sheaths glabrous; blades up to 3 dm. long, flat, linear, 4–6 mm. wide, glabrous; panicle usually composing more than one half of the stem; spathes long-attenuate at the apex from a lanceolate base; involucral spikelets 5–7 mm. long, the first scale papillose-ciliate on the keels with long stiff hairs; pedicellate spikelets lanceolate; sessile spikelets 5–6 mm. long, including the obtuse callus which is about 1 mm. long and densely barbed with brown hairs, the first scale hispid at the summit, the fourth scale with an awn 3–5 cm. long.

TYPE LOCALITY: India.
DISTRIBUTION: Introduced into Martinique and Barbados; native of the East Indies.
ILLUSTRATIONS: Gaertn. Fruct. *pl. 175;* Lam. Tab. Encyc. *pl. 841, f. 1, 2;* Beauv. Agrost. *pl. 23, f. 7.*

Tribe 3. **ZOYSIEAE.** Annual or perennial grasses, with a spicate or spikelike usually terminal inflorescence, the rachis continuous, the spikes rarely arranged in fascicles in the leaf-axils. Spikelets articulated below the empty scales, solitary, or sometimes with the separating internodes so short that the spikelets form clusters of 3 or 4, the empty scales in this case forming a false involucre to the group, and either all free or united, or forming two groups of 3 each, perfect or unisexual, rarely sterile, 1-flowered, or the staminate sometimes 2-flowered, rarely 3- or 4-flowered. Scales of the spikelet 3 or 4, rarely 2, or occasionally 5 or 6 in the staminate spikelets, the lower 1 or 2 scales empty, herbaceous. chartaceous, or coriaceous, often much indurated at the base, awned or awnless, the first sometimes small or wanting, or often equaling the second, which is sometimes armed with hooked spines; flowering scales membranous, awnless, the third scale in the 4-scaled spikelets without a flower, or flower-bearing in the staminate spikelets.

Spikelets with the separating internodes very short, in clusters of 3 or 4, the empty scales forming a false involucre to the group.
  Involucre formed of the large indurated second empty scales which are united at the base; spikelets perfect. 30. ANTHEPHORA.
  Involucre formed of all the empty scales; spikelets of 2 kinds, the central differing from the lateral in sex.
    Involucre with the 3 empty scales on each side united at the base; plants with runners, the internodes arched. 31. HILARIA.
    Involucre with the empty scales free; plants with stout branching rootstocks. 32. PLEURAPHIS.
Spikelets never in involucrate groups.
  Spikelets perfect; empty scales 1 or 2.
    Second empty scale (sometimes appearing to be the first by the abortion of the first scale) with rows of hooked spines on the back. 34. NAZIA.
    Spikelets without hooked spines.
      Empty scales 2, at least in the perfect spikelets.
        Spikelets in 2's or 3's, the terminal one fertile; scales usually awned. 33. AEGOPOGON.
        Spikelets single; scales awnless. 35. LEPTOTHRIUM.
      Empty scale 1, with 3–5 awns. 36. SCHAFFNERELLA.
  Spikelets unisexual, the plants dioecious; empty scales 3. 37. FOURNIERA.

30. **ANTHEPHORA** Schreb. Beschr. Gräs. **2**: 105. 1810.

Tufted, sometimes branched, grasses, with usually flat leaf-blades, and terminal elongate cylindric spikes, the spikelets borne in deciduous clusters upon a strongly flexuous rachis and appressed closely to its curves. Spikelets 3 or 4 in each cluster, 1-flowered, the first empty scales indurated and forming a sort of false involucre to the cluster; empty scales large, rigid, acute or sometimes produced into short awns; remaining scales much thinner, the innermost one enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles shortly united at the base. Stigmas plumose.

Type species, *Tripsacum hermaphroditum* L.

1. **Anthephora hermaphrodita** (L.) Kuntze, Rev. Gen. 759. 1891.

Tripsacum hermaphroditum L. Syst. Nat. ed. 10. 1261. 1759.
Anthephora elegans Schreb. Beschr. Gräs. **2**: 105. 1810.
Anthephora villosa Spreng. Neue Entdeck. **3**: 14. 1822.
Cenchrus laevigatus Trin. Gram. Pan. 74. 1826.

Annual. Stems up to 1 m. tall, often rooting and branching at the lower nodes; leaves glabrous or hirsute; blades up to 2 dm. long and 1 cm. wide, flat; spikes up to 12 cm. long, rarely interrupted below, often long-exserted; spikelet-clusters, including the stipe at the base, 5–7 mm. long, the first scales broadly ovate to elliptic, acute to acuminate, glabrous or hispidulous.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Bahamas and tropical America.
ILLUSTRATIONS: Schreb. Beschr. Gräs. **2**: *pl. 44*; Beal, Grasses N. Am. **2**: *f. 15*; Field Columb. Mus. Publ. Bot. **3**: 23, *f.*

31. HILARIA H.B.K. Nov. Gen. & Sp. 1 : 115. 1815.

Hexarrhena J. Presl, in Presl, Rel. Haenk. 1 : 326. 1830.
Scleropelta [*Schleropelta*] Buckl. Prel. Rep. Geol. & Agr. Surv. Tex. App. 1. 1866.

Perennial grasses with long runners or stolons, the internodes arched, and the empty scales on each side of the spikelet-cluster united at the base, the flowering scale of the central spikelet abruptly narrowed into a 3-nerved beak. Spikelets in sessile deciduous clusters of 3, the empty scales resembling an involucre, the 3 on each side united at the base, the central spikelet 1-flowered, pistillate, the lateral spikelets 2–4-flowered, staminate. Empty scales much firmer than the flowering scales; anterior scales (those of the lateral spikelets) markedly inequilateral, the one side thin-membranous, nerveless, the outer side much firmer and broader, strongly nerved, the nerves vanishing below the apex or often extended as points or awns, the second scale of each spikelet broader and longer than the other one; posterior scales (those of the central spikelet) chartaceo-coriaceous, 2- or 3-lobed or 2- or 3-awned at the apex. Flowering scales of the lateral spikelet thin-membranous, 3-nerved, the lateral nerves fainter, the palets about as long; flowering scale of the central spikelet firmer, elliptic or oval below and nerveless or faintly nerved, abruptly narrowed into a long linear strongly 3-nerved beak, the palet about as long and similar in texture.

Type species, *Hilaria cenchroides* H.B.K.

Anterior empty scales of the spikelet-cluster, at least the narrower ones, and the posterior empty scales awned, the awns terete, hispidulous.
- Spikelet-clusters broad, sometimes nearly as wide as long, the awns usually shorter than the spikelets; first empty scale of the lateral spikelets with the lateral nerves, in addition to the midnerve, usually excurrent; second empty scale broad, one half as wide as long or more. 1. *H. cenchroides*.
- Spikelet-clusters narrow, the awns equaling or exceeding the spikelets; first empty scale of the lateral spikelets with the lateral nerves vanishing at or below the apex, the midnerve only excurrent; second empty scale narrow, usually one third as broad as long or less. 2. *H. Belangeri*.

Anterior empty scales of the spikelet-cluster awnless, the awns of the posterior empty scales flat, stout, strongly long-ciliate. 3. *H. ciliata*.

1. Hilaria cenchroides H.B.K. Nov. Gen. & Sp. 1 : 117. 1815.

Anthephora punctulata Steud. Syn. Gram. 111. 1854.

Stems 6–30 cm. tall, glabrous, or often puberulent or hirsute below the inflorescence, simple or sparingly branched, often rooting at the lower nodes, the nodes barbed; leaf-sheaths glabrous or sparingly hirsute; blades commonly 3–6 cm. long, or rarely 1 dm. or more, up to 5 mm. wide, usually glabrous except for a few long hairs on the upper surface near the base, rarely sparingly hirsute all over; inflorescence 1.5–3 cm. long; spikelet-clusters 5–6 mm. long, broadly cuneate, often nearly as broad as long; empty scales of the lateral spikelets strongly scabrous, shorter than the cluster, the first scale unequally 2-lobed at the apex, the midnerve running out between the lobes as a hispidulous awn, the lateral nerves also often running out into short points, the second scale about one half as broad as long when spread out, 2-toothed or 2-lobed at the apex, 4–6-nerved, the midnerve sometimes excurrent as a short point, the lateral nerves usually vanishing at or below the apex, rarely excurrent; empty scales of the central spikelet 2-lobed to the middle, the hispid terete awn arising between the lobes, the inner margin of the lobes usually bordered with a hispid nerve which is commonly excurrent in a short point, the lobes obtuse or oblique.

TYPE LOCALITY: On mountain plains, between Celaya and Guanajuato, Guanajuato.
DISTRIBUTION: Southern Durango and San Luis Potosi to Guatemala.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 37*.

2. Hilaria Belangeri (Steud.) Nash.

Anthephora Belangeri Steud. Syn. Gram. 111. 1854.
Scleropelta stolonifera Buckl. Prel. Rep. Geol. & Agr. Surv. Tex. App. 1. 1866.
Hilaria cenchroides texana Vasey, Contr. U. S. Nat. Herb. 1 : 53. 1890.
Hilaria texana Nash, in Small, Fl. SE. U. S. 68. 1903.

Stems up to 3 dm. tall, simple, often puberulent just below the inflorescence, the nodes barbed; leaf-sheaths glabrous or sparingly hirsute; blades commonly 2–6 cm. long, rarely exceeding 1 dm., 1–2.5 mm. wide, usually rough, glabrous or sparingly hirsute; inflorescence

1.5–3 cm. long; spikelet-clusters 5–6 mm. long, cuneate; empty scales of the lateral spikelets equaling or a little shorter than the cluster, the first scale unequally 2-lobed at the apex, 3–4-nerved, the midnerve excurrent as a rather long awn between the lobes, the remaining nerves vanishing below the apex, or the longest one sometimes shortly excurrent, the second scale when spread out one third as broad as long or less, 2-toothed at the apex, 4-nerved, the midnerve excurrent between the lobes as an awn about 0.5 mm. long, the remaining nerves vanishing below the obtuse apex; empty scales of the central spikelet 2-lobed to the middle, the hispid terete awn arising between the lobes, the margin of the lobes often bordered with a hispid nerve.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Central Texas to Arizona, south to Chihuahua and Sonora.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 10*; Bull. U. S. Dep. Agr. Agrost. **7**: *f. 18*; **20**: *f. 14*.

3. **Hilaria ciliata** (Scribn.) Nash.

Hexarrhena cenchroides J. Presl, in Presl, Rel. Haenk. **1**: 326. 1830. Not *Hilaria cenchroides* H.B.K. 1815.
Hilaria cenchroides ciliata Scribn. Proc. Acad. Phila. 1891: 293. 1891.

Stems finally long and branching, up to 6 dm. long, glabrous or puberulent, the nodes usually barbed; leaf-sheaths glabrous, strongly nerved, much shorter than the longer blades; blades on the main stem often 2 dm. long, those on the branches much shorter, up to 6 mm. wide, rough, usually glabrous, or the upper surface with a few long hairs near the base; inflorescence 1.5–4 cm. long; spikelet-clusters 4–6 mm. long, the empty scales of the lateral spikelets oblong-linear, 3–5-nerved, the nerves usually vanishing at or below the apex, very rarely excurrent as short points; empty scales of the central spikelet 2- or 3-lobed to about the middle, the inner lobe usually linear, obtuse, ciliate, the others with flat, stout, long-ciliate awns.

TYPE LOCALITY: Near Guadalajara, Jalisco.
DISTRIBUTION. Colima, Jalisco, and Tepic.
ILLUSTRATION: Presl, Rel. Haenk. **1**: *pl. 45*.

32. **PLEURAPHIS** Torr. Ann. Lyc. N. Y. **1**: 148. 1824.

Perennial grasses with stout branching rootstocks, and the empty scales of the spikelet-clusters free, not united at the base, the flowering scale of the central spikelet not narrowed into a beak. Spikelets in sessile deciduous clusters of 3, the lateral spikelets 2- or 3-flowered, staminate, the central spikelet 1-flowered, perfect. Lateral spikelets with the empty scales usually unequal in length, awnless or awned, the first scale strongly inequilateral, 2-lobed, one lobe very narrow and often resembling a lateral rudiment, nerveless or rarely 1-nerved, the other lobe much broader, usually 3- or 4-nerved, the flowering scales compressed, commonly 3-nerved, usually short-awned between the lobes. Central spikelet with the empty scales nearly equilateral, with 4–8 awns or awned lobes at the apex, and also with a long often dorsal awn, the flowering scale 3-nerved, usually short-awned between the lobes. Stamens 3. Stigmas shortly plumose.

Type species, *Pleuraphis Jamesii* Torr.

Leaves and stems glabrous, or at least not woolly; stems simple.
  First scale of the lateral spikelets cuneate, longer than the second scale, flabellately nerved. 1. *P. mutica*.
  First scale of the lateral spikelets linear-oblong, shorter than the second scale, the nerves parallel. 2. *P. Jamesii*.
Leaves and stems densely woolly-pubescent; stems branched. 3. *P. rigida*.

1. **Pleuraphis mutica** Buckl. Proc. Acad. Phila. **1862**: 95. 1862.

Hilaria mutica Benth. Jour. Linn. Soc. **19**: 62. 1881.

Stems 2–6 dm. tall, simple, erect, smooth or sometimes rough below the puberulent nodes; leaves glabrous or hirsute, smooth or rough, confined mainly to the lower portion of the stem; sheaths overlapping; blades up to 8 cm. long, sometimes longer on the innovations, 2–4 mm. wide, erect or ascending, usually involute on the margins; inflorescence 3.5–7 cm. long, the axis glabrous, sometimes hispidulous on the angles; spikelet-clusters 5.5–7.5 mm. long, 3–4 times as long as the basal hairs; lateral spikelets with the empty scales inequilateral, long-ciliate on the margins, 2-lobed, the first scale longer than the second, cuneate, flabellately

5- or 6-nerved, the midnerve excurrent as a hispid awn between the lobes, one lobe so small that it resembles a lateral appendage on the inner side of the scale, the second scale linear-oblong, 4- or 5-nerved, the parallel nerves all vanishing below the apex, none of them excurrent, the flowering scales 2 or 3, long-ciliate at the 2-lobed apex, the lobes rounded, 2- or 3-nerved, one lateral nerve sometimes being suppressed, the midnerve terminating at the sinus, the lateral nerves vanishing below the apex; central spikelet with the empty scales 2-lobed, long-ciliate on the margins above, equilateral, the apex divided into about 4 awns or awned lobes, the midnerve usually excurrent below the middle as a hispid awn shorter than the scale, the flowering scale 3-nerved, the lateral nerves vanishing below the apex, the midnerve excurrent between the obtuse lobes as a short hispidulous awn.

TYPE LOCALITY: Northern Texas.
DISTRIBUTION: Western Texas to California, and south to Durango and Lower California.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 19;* Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 11.*

2. **Pleuraphis Jamesii** Torr. Ann. Lyc. N. Y. 1: 148. 1824.

Hilaria Jamesii Benth. Jour. Linn. Soc. 19: 62. 1881.

Stems 1.5–5 dm. tall, erect, simple, usually hispidulous or puberulent below the inflorescence and below the nodes which are generally barbed; leaf-sheaths smooth or rough, glabrous; blades confined mainly to the lower portion of the stem, up to 2 dm. long, 2–3 mm. wide, spreading or erect, the margins involute, rough on the lower surface, the upper surface densely puberulent; inflorescence 3–7 cm. long, the axis commonly puberulent; spikelet-clusters 7–9 mm. long, about twice as long as the basal hairs; lateral spikelets with the empty scales linear-oblong, 3- or 4-nerved, the nerves parallel, strongly hispidulous all over on the outside, ciliate on the margins, 2-lobed, the first scale shorter than the second, strongly inequilateral, the one lobe very narrow, as long as the other lobe or but little shorter, the midnerve excurrent as a hispid awn between the lobes, much longer than the scale, the remaining nerves vanishing below the apex, the second scale entire or minutely bifid at the apex, the nerves vanishing at or below the apex or the midnerve sometimes excurrent as a short hispid point, the flowering scales usually 2, 3- or rarely 5-nerved; central spikelet with the empty scales long-ciliate, the apex divided into 4–8 long-awned lobes, the midnerve excurrent usually at or below the middle as a hispid awn longer than the scale, the flowering scale 3-nerved, or rarely with an additional nerve on one side, the midnerve excurrent between the lobes as a short hispid awn.

TYPE LOCALITY: On the high plains of the trap formation at the sources of the Canadian River.
DISTRIBUTION: Wyoming to Nevada, and south to western Texas and southern California.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 20;* Ann. Lyc. N. Y. 1: *pl. 10;* Vasey, Agr. Grasses U. S. *pl. 23;* ed. 2. *pl. 25;* Bull. U. S. Dep. Agr. Bot. 1: *pl. 10;* 6: *pl. 6.*

3. **Pleuraphis rigida** Thurb. Bot. Calif. 2: 293. 1880.

Hilaria rigida Benth.; Vasey, Grasses U. S. 16. 1883.

A tall perennial with the leaves and stems densely woolly-pubescent, sometimes glabrate in age. Stems up to 8–10 dm. tall, finally branching; leaf-sheaths crowded and overlapping below, shorter than the internodes above; blades erect or ascending, up to 8 cm. long, 3–5 mm. wide, involute on the margins; inflorescence 3–8 cm. long, the axis puberulent; spikelet-clusters 8–10 mm. long, 2–3 times as long as the basal hairs; lateral spikelets with the empty scales ciliate above the middle, the apex fimbriate, the first scale narrowly obovate-cuneate, deeply 2-lobed at the apex, sometimes to the middle, 4- or 5-nerved, the midnerve excurrent about the middle of the scale into a hispidulous awn longer than the scale, the one lobe very narrow, usually 1-nerved, the nerve running out into a short awn, the other lobe much broader, the nerves vanishing below the apex, the second scale commonly unequally 3-lobed at the apex, 5–7-nerved, 1 or 2 of the nerves excurrent between the lobes as short awns, the flowering scales 2 or 3, 3-nerved, 2-lobed at the ciliate apex, the midnerve usually excurrent as a short awn; central spikelet with the empty scales ciliate with very long hairs, with a long hispid awn arising from the back below the middle, the apex of the scale with 6–8 long awns or awned lobes, the flowering scale shortly 2-lobed at the apex, the lobes ciliate, 3-nerved, the midnerve excurrent as a short awn.

TYPE LOCALITY: Fort Mohave, California.
DISTRIBUTION: Southern Utah to Arizona, southern California, and Lower California.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 21;* Bull. U. S. Detp. Agr. Bot. 12[2]: *pl. 2.*

33. **AEGOPOGON** H. & B.; Willd. Sp. Pl. 4: 899. 1806.

Hymenothecium Lag. Gen. Sp. Pl. 4. 1816.
Schellingia Steud. Flora **33**: 231. 1850.

Annual grasses, with slender stems, and the spikelets borne in clusters in a 1-sided raceme-like inflorescence. Spikelet-clusters of 2 or 3 spikelets, rarely more, one spikelet sessile or short-pedicellate, perfect, the others on longer pedicels, staminate, empty, or rudimentary. Empty scales awned or awnless, 1-nerved, usually 2-lobed or 2-toothed at the apex, the teeth or lobes rounded or truncate at the summit, acute or acuminate, the empty scales rarely lanceolate and acute or only obscurely toothed at the apex. Flowering scales 3-nerved, 3-toothed or 3-lobed at the apex, the teeth or lobes obtuse, or more commonly acute or acuminate, often awned, the midnerve sometimes barely excurrent, but usually extending into a long awn; palets 2-nerved, the nerves usually extending into awns. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Aegopogon cenchroides* H. & B.

Empty scales lanceolate, entire, or rarely obscurely toothed at the apex; spikelet-clusters 2–2.5 mm. long, exclusive of the peduncle. 1. *A. imperfectus.*
Empty scales manifestly 2-toothed or 2-lobed at the apex; spikelet-clusters 2.5–4 mm. long, exclusive of the awns and peduncle.
  Lobes of the empty scales acute or acuminate.
    Nerves of the empty scales extending into an awn not more than twice as long as the scale; spikelet-clusters 3–4 mm. long. 2. *A. cenchroides.*
    Nerves of the empty scales extending into an awn 3–4 times as long as the scale; spikelet-clusters 2.5–3 mm. long. 3. *A. breviglumis.*
  Lobes of the empty scales rounded or truncate at the apex. 4. *A. unisetus.*

1. **Aegopogon imperfectus** Nash, sp. nov.

Stems up to 2 dm. long, very slender; leaf-sheaths smooth and glabrous; blades 1–4 cm. long, up to 1 mm. wide, glabrous beneath, puberulent on the upper surface; inflorescence 3–4 cm. long; spikelet-clusters 2–2.5 mm. long, exclusive of the peduncle, of 2 spikelets, one perfect, the other rudimentary, or sometimes a third spikelet present consisting of a pedicel and a minute scale; empty scales of the perfect spikelet 1-nerved, lanceolate and acute, or rarely obscurely 2-toothed and shortly awned, those of the other spikelets very small and often rudimentary; flowering scale of the perfect spikelet 3-nerved, 3-toothed at the apex, the nerves sometimes slightly excurrent, the flowering scale of the other spikelets rudimentary.

Type collected on cool mossy ledges, Arroyo Aucho, Sierra Madre, Chihuahua, Mexico, October 15, 1887, *C. G. Pringle 1408* (herb. Columbia Univ.).

DISTRIBUTION: Known only from the type locality.

2. **Aegopogon cenchroides** H. & B.; Willd. Sp. Pl. 4: 899. 1806.

Aegopogon geminiflorus H.B.K. Nov. Gen. & Sp. 1: 133. 1815.
Hymenothecium trisetum Lag. Gen. Sp. Pl. 4. 1816.
Hymenothecium quinquesetum Lag. Gen. Sp. Pl. 4. .1816.
Aegopogon trisetus R. & S. Syst. Veg. 2: 805. 1817.
Aegopogon quinquesetus R. & S. Syst. Veg. 2: 805. 1817.
? *Aegopogon setifer* Nees, Linnaea **19**: 691. 1847.
? *Aegopogon multisetus* Steud. Syn. Gram. 146. 1854.
? *Aegopogon rigidisetus* Steud. Syn. Gram. 146. 1854.
Aegopogon cenchroides abortivus Fourn. Mex. Pl. Gram. 72. 1881.
Aegopogon cenchroides multisetus Fourn. Mex. Pl. Gram. 72. 1881.
Aegopogon gracilis Vasey, Bull. Torrey Club **13**: 230. 1886.

Stems 1–5 dm. tall, slender; leaf-sheaths smooth and glabrous; blades up to 1 dm. long, usually flat, 1–2 mm. wide, glabrous beneath, puberulent on the upper surface; inflorescence 2–8 cm. long, sometimes interrupted below; spikelet-clusters 3–4 mm. long, exclusive of the awns and hispid peduncle, of usually 3, or sometimes 2, spikelets on hispid pedicels, the sessile or short-pedicellate spikelet perfect, the others staminate or empty, one often reduced in size; empty scales strongly scabrous, linear to oblong or cuneate, awned from the 2-lobed apex, the awn from shorter than to longer than the scale, rarely twice its length, the lobes very short, deltoid and merely acute to subulate, awned and one half as long as the scale or more; flowering scales 3-nerved, 3-lobed and 3-awned at the apex, the

midnerve extending into a hispidulous terete awn as long as or longer than the scale, the lateral lobes with usually a minute tooth at the base of the awn.

TYPE LOCALITY: Cumana, Venezuela.
DISTRIBUTION: California, Mexico, and Guatemala; also in South America.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **20**: *f. 15*; H.B.K. Nov. Gen. & Sp. *pl. 42, 43*; Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 12*; Beal, Grasses N. Am. **2**: *f. 17*.

3. **Aegopogon breviglumis** (Scribn.) Nash, sp. nov.

Aegopogon geminiflorus breviglumis Scribn. Zoe **4**: 386. 1894.

Stems 1–5 dm. tall, very slender; leaf-sheaths smooth and glabrous; blades usually 1–5 cm. long, rarely 1 dm., up to 1.5 mm. wide, glabrous, or sometimes puberulent on the upper surface; inflorescence 2–8 cm. long, sometimes interrupted below; spikelet-clusters 2.5–3 mm. long, exclusive of the awns and peduncle, of 2 or 3 spikelets, one spikelet sessile or short-pedicellate, perfect, the other 1 or 2 with longer pedicels, staminate or empty, sometimes rudimentary; empty scales short, 1-nerved, the nerve running out into an awn 3 times as long as the scale or more, 2-toothed or 2-lobed at the apex, the teeth or lobes acute, the scales sometimes reduced to an awn only; flowering scale of the perfect spikelet 3-lobed at the apex, 3-nerved and 3-awned, the midnerve running out into a long awn usually 3–4 times as long as the scale, the lateral nerves very acute, awned, the awn several times as long as the lobe with usually an acute tooth at the base, the flowering scale of the other spikelets similar or sometimes reduced to awns.

TYPE LOCALITY: Saucito, Lower California.
DISTRIBUTION; Lower California, Jalisco, and Colima.

4. **Aegopogon unisetus** (Lag.) R. & S. Syst. Veg. **2**: 805. 1817.

Hymenothecium uniselum Lag. Gen. Sp. Pl. 4. 1816.
Schellingia tenera Steud. Flora **33**: 232. 1850.
Aegopogon geminiflorus Fourn. Mex. Pl. Gram. 71. 1881. Not *A. geminiflorus* H.B.K. 1815.
Aegopogon geminiflorus purpureus Griseb.; Fourn. Mex. Pl. Gram. 71. 1881.
Aegopogon geminiflorus unisetus Fourn. Mex. Pl. Gram. 71. 1881.
Aegopogon geminiflorus abortivus Fourn. Mex. Pl. Gram. 71. 1881.

Stems up to 5 dm. long, slender; leaf-sheaths smooth and glabrous; blades usually 1–6 cm. long, rarely 1 dm., 1–3 mm. wide, glabrous beneath, commonly puberulent on the upper surface or rarely glabrous and scabrous; inflorescence 2–6 cm. long, often interrupted below; spikelet-clusters 3–4 mm. long, exclusive of the awns and the hispid peduncle, of 3 spikelets on hispid pedicels, the sessile or short-pedicellate spikelet perfect, the others empty; empty scales obovate, obovate-cuneate, or cuneate, 2-lobed at the apex with rounded or truncate lobes, 1-nerved, rarely awnless, the nerve usually extending as a hispidulous awn shorter than the scale, or rarely equaling it; flowering scale of the perfect spikelet 3-nerved, 3-lobed and 3-awned at the apex, the midnerve running out into a hispidulous awn usually longer than the spikelet, rarely shorter, the lateral lobes subulate and extending into short awns, and sometimes with a minute tooth at the base of the awn, the lobes rarely obtuse and merely awn-pointed, the flowering scale of the other spikelets with the lobes rounded and muticous, rarely awn-pointed, or the lobes rarely resembling those of the perfect spikelet.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Arizona to Guatemala.
ILLUSTRATION: Flora **33**: *pl. 1*.

34. **NAZIA** Adans. Fam. Pl. **2**: 31, 581. 1763.

Tragus Hall. Hist. Stirp. Helv. **2**: 203. 1768.
Lappago Schreb. Gen. Pl. 55. 1789.

Annual grasses, with flat leaf-blades, and a spike-like inflorescence. Spikelets articulated below the empty scales, 1-flowered, usually in clusters of 2–5, rarely single, the terminal spikelet of each cluster often sterile or reduced in size. Scales 2 or 3; first scale small, thin, almost hyaline, or sometimes wanting; second scale firm, with the nerves dorsally armed with hooked spines which are swollen and opaque at the base, more slender and translucent above; third

scale membranous, hyaline, subtending a hyaline palet and a perfect flower. Stamens 3. Styles short, distinct. Stigmas moderately long, plumose.

Type species, *Cenchrus racemosus* L.

Spikelets 2–3 mm. long, the spines not exceeding 0.5 mm. in length, the very stout swollen opaque base usually longer than the translucent apex. 1. *N. aliena.*
Spikelets 4–4.5 mm. long, the longer spines often 1 mm. long, the opaque somewhat swollen base usually shorter than the translucent apex. 2. *N. racemosa.*

1. **Nazia aliena** (Spreng.) Scribn. Bull. U. S. Dep. Agr. Agrost. **17**: 28. 1899.

Lappago racemosa H.B.K. Nov. Gen. & Sp. **1**: 119. 1815. Not *L. racemosa* Willd. 1798.
Lappago aliena Spreng. Neue Entdeck. **3**: 15. 1822.
Tragus alienus Schultes; R. & S. Syst. Veg. Mant. **2**: 205. 1824.
Tragus Berteronianus Schultes, in R. & S. Syst. Veg. Mant. **2**: 205. 1824.
Tragus occidentalis Nees, Agrost. Bras. 286. 1829.
Nazia occidentalis Scribn. Zoe **4**: 386. 1894.
Nazia racemosa aliena Scribn. & Sm. Bull. U. S. Dep. Agr. Agrost. **4**: 12. 1897.

Stems tufted, up to 3 dm. tall, often rooting at the lower nodes and there sending up tufts of erect branches; leaf-sheaths smooth and glabrous; blades up to 8 cm. long, usually shorter, 2–4 mm. wide, flat, or involute on the ciliate margins, otherwise glabrous; inflorescence up to 1 dm. long, usually 6 cm. or less, often included at the base; spikelets numerous, 2–3 mm. long, the second scale with the spines 0.5 mm. long or less, the stout swollen opaque base longer than the translucent more slender apex.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Southern and western Texas to Arizona and northern Mexico, and throughout tropical America; occasional as a waif or adventive in the eastern United States.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 324*; **20**: *f. 16*; Bull. U. S. Dep. Agr. Bot. **12**[1]: *pl. 14* (as *Tragus racemosus*); Britt. & Brown, Ill. Fl. *f. 226* (as *N. racemosa*); Beal, Grasses N. Am. **2**: *f. 18*.

2. **Nazia racemosa** (L.) Kuntze, Rev. Gen. 780. 1891.

Cenchrus racemosus L. Sp. Pl. 1049. 1753.
Phalaris muricata Forsk. Fl. Aegypt.-Arab. 202. 1775.
Tragus racemosus All. Fl. Ped. **2**: 241. 1785.
Tragus muricatus Moench, Meth. 53. 1794.
Lappago racemosa Willd. Sp. Pl. **1**: 484. 1798.

Stems up to 4 dm. tall, often rooting at the lower nodes and there sending up tufts of erect branches; leaf-sheaths smooth and glabrous; blades up to 6 cm. long, usually less than 4 cm., 2–4 mm. wide, flat, ciliate on the margins, otherwise glabrous; inflorescence 2–8 cm. long, often included at the base; spikelets 4–4.5 mm. long, the spines with the somewhat swollen opaque base shorter than the translucent apex, the longer ones often 1 mm. in length.

TYPE LOCALITY: Southern Europe.
DISTRIBUTION: Occasionally introduced about cities or as a ballast waif; native of the warm temperate and tropical regions of the Old World.
ILLUSTRATIONS: Host, Gram. Austr. **1**: *pl. 36*; Sibth. Fl. Graeca *pl. 101*; Nees, Gen. Fl. Germ. *Tragus*.

35. **LEPTOTHRIUM** Kunth, Rév. Gram. 156. 1829.

Glabrous tufted grasses, with rigid branching stems, short rigid leaf-blades, and shortly pedicellate spikelets borne alternately in a slender inflorescence. Spikelets 1-flowered, on angled pedicels which are articulated with the rachis, of 3 scales and a palet; empty basal scales 2, coriaceous, subulate, the first a little the shorter, somewhat keeled, ciliate on the margins, the second convolute, enclosing the flowering scale; flowering scale hyaline, 1-nerved, ovate, somewhat keeled, enclosing a palet of similar texture about one third its length and a perfect flower; lodicules 2, broadly cuneate, very thinly membranous, hyaline, about one half the length of the ovary, truncate or sinuately lobed at the apex. Stamens 3. Ovary glabrous, with 2 short terminal styles. Stigmas penicilliform, with the hairs somewhat branched.

Type species, *Leptothrium rigidum* Kunth.

1. **Leptothrium rigidum** Kunth, Rév. Gram. 156. 1829.

Stems 2–4 dm. tall; leaf-sheaths longer than their involute blades, which are 1.5–3 cm long; inflorescence 4–8 cm. long; spikelets 5–6 mm. long, on stout pedicels 1–2 mm. long.

TYPE LOCALITY: "America calidior."
DISTRIBUTION: Known definitely only from the Palisadoes, Jamaica.
ILLUSTRATION: Kunth, Enum. 1: Suppl. *pl. 38, f. 2.*

36. SCHAFFNERELLA Nash.

Schaffnera Benth. in Hook. Ic. Pl. 14: 59. 1882. Not *Schaffneria* Fée, 1857.

Low annual grasses, with diffusely branching stems, short leaf-blades, and the spikelets borne singly in short partly included spikes, the lower ones sometimes single, the upper ones in fascicles of 2–several. Spikelets 1-flowered, perfect, or the terminal one sometimes sterile or empty; empty basal scale 1, its body about one half as long as the flowering scale, 7–9-nerved, 3–5-awned, the lateral awns usually with a tooth or lobe at the base; flowering scale membranous, shortly 2-lobed at the apex, an awn arising between the lobes; palet a little shorter than the scale, thinly hyaline, 2-nerved, obtuse or 2-toothed at the apex. Stamens 3. Styles 2, elongate, distinct, slender. Stigmas shortly plumose.

Type species, *Schaffnera gracilis* Benth.

1. Schaffnerella gracilis (Benth.) Nash.

Schaffnera gracilis Benth. in Hook. Ic. Pl. 14: 59. 1882.

Stems up to 2.5 dm. tall, slender, with long internodes; leaf-sheaths broad and strongly striate, with hyaline margins which run into the ligule; blades 5–20 mm. long, 1–1.5 mm. wide, linear to linear-lanceolate, rough, acute; inflorescence 1–2 cm. long; spikelets 5–6 mm. long, exclusive of the awns, the first scale with the awns longer than the body, the flowering scale with the awn shorter than itself.

TYPE LOCALITY: Mountains of San Miguelito, in the valley of San Luis Potosi, Mexico.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Hook. Ic. Pl. *pl. 1378;* Beal, Grasses N. Am. 2: *f. 19.*

37. FOURNIERA Scribn. Bull. U. S. Dep. Agr. Agrost. 4: 7. 1897.

Dioecious, extensively creeping grasses, with a spicate inflorescence, the deciduous spikelets dissimilar, alternate, solitary and sessile at the notches of a continuous flexuous rachis which is extended into a 2-cleft prolongation. Staminate spikelets 2-flowered, the first flower sessile, the other on a stipe formed by the internode of the rachilla which is not extended beyond the flowering scale; empty basal scales 3, 1-nerved, 2 small, the other larger; flowering scales 3-nerved, 3-toothed at the apex, the midnerve extending into a short awn; stamens 3. Pistillate spikelets 1-flowered, the rachilla extending into a 3-awned prolongation; empty basal scales 3, cuneate, rounded or truncate at the apex, 2 at the base of the flowering scale, one 2- or 3-nerved, the other 3–5-nerved, the third scale a little narrower and usually 1-nerved and somewhat 3-lobed at the apex; flowering scale on a short stipe, 3-nerved, 3-toothed at the apex, the central tooth the longest and sometimes 2-toothed, the midnerve projecting beyond the teeth as an awn; styles distinct; stigmas plumose.

Type species, *Fourniera mexicana* Scribn.

1. Fourniera mexicana Scribn. Bull. U. S. Dep. Agr. Agrost. 4: 8. 1897.

Stems rooting at the lower nodes and there forming tufts of erect or ascending branches up to 3 dm. tall; leaf-sheaths smooth; blades up to 8 cm. long and 2 mm. wide, somewhat rough beneath, glabrous or sparingly pubescent on the upper surface; spikes terminal and axillary, sometimes 3 or 4 from the uppermost leaf-sheath, 1.5–3 cm. long, bearing 3–15 spikelets; staminate spikelets 4–5 mm. long, the 2 empty scales at the base of the first flowering scale about 1 mm. long, the third empty scale broader and about 2 mm. long, the first flowering scale 3 mm. long, thin-membranous, glabrous, entire or indistinctly 3-toothed at the apex, the second flowering scale about 4 mm. long, including the short awn, glabrous; pistillate spikelets about 4 mm. long, excluding the awns, the 3 awns of the prolongation of the glabrous rachilla 6–8 mm. long, ciliate on the margins, the empty scales 2–3 mm. long, scabrous, densely pilose at the base, the flowering scale 3 mm. long.

TYPE LOCALITY: In loose gravelly soil in a deep cut in the mountains near Acapulco, Mexico.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 4: *f. 1–3;* Circ. U. S. Dep. Agr. Agrost. 15: *f. 1, 2.*

Tribe 4. **TRISTEGINEAE.** Perennial grasses, with the racemes, the rachis of which is continuous, arranged in terminal dense or open panicles. Spikelets articulated below the empty scales, solitary, in pairs, or fascicled, 1- or 2-flowered, the terminal flower perfect, with sometimes a second staminate flower below. Scales 3 or 4, the 2 or 3 lower usually empty, or rarely the upper one with a staminate flower, membranous, the first scale small, or occasionally aristiform and as long as or longer than the spikelet, the terminal scale of the spikelet bearing a perfect flower, awned or awnless, membranous, or sometimes more delicate and hyaline; palet hyaline or thinly membranous.

Flowering scales awned.	38. ARUNDINELLA.
Flowering scales awnless.	
First scale about one half as long as the spikelet, ovate, with a blade.	39. TRISCENIA.
First scale as long as or exceeding the spikelet, aristiform, bladeless.	40. ARTHROPOGON.

38. **ARUNDINELLA** Raddi, Agrost. Bras. 36. 1823.

Goldbachia Trin. Neue Entdeck. 2: 81. 1821. Not *Goldbachia* DC. 1821.
Acratherum Link, Hort. Berol. 1: 230. 1827.
Calamochloë Reichenb. Consp. 52. 1828.
Thysanachne Presl, Thysan. Nov. Pl. Gen. 1829.
Brandtia Kunth, Rév. Gram. 511. 1831.

Usually tall, sometimes low, grasses, with broad flat leaf-blades, and terminal open and lax or narrow and dense panicles. Spikelets articulated to the pedicel below the empty scales, in pairs, 1- or 2-flowered, the terminal flower perfect, the lower staminate or wanting. Scales 4; first scale shorter than the spikelet, awnless; second scale longer than the rest, acuminate, or sometimes produced into a straight awn; third scale shorter than the fourth scale, thinner, muticous, enclosing a hyaline palet and sometimes also a staminate flower; fourth scale membranous, hyaline or opaque, enclosing a perfect flower, entire or minutely toothed at the apex, and usually bearing a geniculate perfect (with a spiral column) or imperfect awn, rarely awnless. Stamens 3. Styles distinct from the base. Stigmas plumose.

Type species, *Arundinella brasiliensis* Raddi.

Awn with the column shorter than the scale, rarely equaling it, tightly spiral and not reaching the apex of the second scale.	1. *A. martinicensis.*
Awn with the column much longer than the scale, usually over twice its length, straight, somewhat twisted, rarely spiral, reaching the apex of the second scale or extending beyond it.	2. *A. peruviana.*

1. **Arundinella martinicensis** Trin. Gram. Pan. 62. 1826.

Thysanachne scoparia Presl, Thysan. Nov. Pl. Gen. 1829.
Arundinella pallida Nees, Agrost. Bras. 465. 1829.
Arundinella scoparia Fourn. Mex. Pl. Gram. 55. 1881.
Arundinella Palmeri Vasey; Beal, Grasses N. Am. 2: 76. 1896.

Stems 1 m. tall or more; leaf-sheaths appressed-hispid toward the summit; blades up to 4 dm. long and 2 cm. wide, rough, usually hispid on one or both surfaces; panicle usually 2–4 dm. long, dense, its branches erect or nearly so, occasionally loose and open and sometimes larger with the branches bearing fewer spikelets and spreading or ascending; spikelets, exclusive of the awn, 3.5–4 mm. long, the first scale one half to two thirds as long as the second scale, 3-nerved, the second scale 5-nerved, the third scale a little shorter or longer than the first, the fourth scale 1.5–2 mm. long, bearing an awn about twice its own length, the tightly spiral column shorter than the scale or rarely equaling it, and shorter than the subula.

TYPE LOCALITY: Martinique.
DISTRIBUTION: Southern Mexico to Costa Rica, and in the West Indies.
ILLUSTRATIONS: Presl, Symb. *pl. 6;* Beal, Grasses N. Am. 2: *f. 20, A, a.*

2. **Arundinella peruviana** (J. Presl) Steud. Syn. Gram. 115. 1854.

Thysanachne peruviana J. Presl, in Presl, Rel. Haenk. 1 : 253. 1830.
Arundinella Deppeana Nees, Bonplandia 3 : 84. 1855.
Arundinella cubensis Griseb. Mem. Am. Acad. II. 8 : 533. 1862.
Arundinella phragmitoides Griseb. Cat. Pl. Cub. 234. 1866.
Arundinella robusta Fourn. Mex. Pl. Gram. 54. 1881.
Arundinella latifolia Fourn. Mex. Pl. Gram. 54. 1881.
Arundinella auletica Rupr.; (Galeotti, Bull. Acad. Brux. 9[2] : 242; hyponym. 1842) Fourn. Mex. Pl. Gram. 54. 1881.
Arundinella scoparia Fourn. Mex. Pl. Gram. 55, in part. 1881.

Stems up to 2–3 m. tall; leaf-sheaths hirsute or hispid toward the summit; blades up to 5 dm. long and 2.5 cm. wide, glabrous, or hirsute or hispid on one or both surfaces; panicle up to 4 dm. long, dense and stout or loose and open, its branches usually long, erect or ascending; spikelets, exclusive of the awn, 4–5.5 mm. long, the first scale 3-nerved, acute, one half to two thirds as long as the second, the second scale 5-nerved, long-acuminate, somewhat recurved above the middle, the apex obtuse, the third scale 5–7-nerved, from a little shorter to somewhat longer than the first scale, the fourth scale about 1.5 mm. long, the awn 8–10 mm. long, the column much longer than the scale, usually more than twice as long, commonly straight, sometimes twisted, rarely loosely spiral, shorter than the subula.

TYPE LOCALITY: Huanuco mountains, Peru.
DISTRIBUTION: Southern Mexico to Panama; Cuba; also in South America.
ILLUSTRATION: Beal, Grasses N. Am. 2: *f. 20, B, b.*

39. **TRISCENIA** Griseb. Mem. Am. Acad. II. 8 : 534. 1862.

Tufted perennial grasses, with slender stems, triangular keeled leaf-blades, and a slender panicle. Spikelets singly arranged, articulated to the pedicels below the empty scales, 1-flowered. Scales 4, awnless, the three outer ones membranous, the fourth thinner, hyaline; first scale less than one half as long as the spikelet; second scale longer than the remaining scales; third scale a little shorter than the second scale; fourth scale about one half as long as the third. Stamens 3. Stigmas protruding above the middle of the spikelet. Caryopsis free, oblong; embryo minute.

Type species, *Triscenia ovina* Griseb.

1. **Triscenia ovina** Griseb. Mem. Am. Acad. II. 8 : 534. 1862.

Stems 1.5–3 dm. tall, about twice as long as the leaves of the innovations; leaf-sheaths broad, strongly striate, long-ciliate on the margins, otherwise glabrous; blades compressed-triangular in cross-section, slender, less than 0.5 mm. wide, up to 12 cm. long, glabrous, or sparingly hairy near the base; panicle slender, up to 1 dm. long, the branches slender and appressed; spikelets 3–3.5 mm. long, acuminate, the first scale 1–3-nerved, acute, the second scale 5-nerved, the third scale 3-nerved, or sometimes with a faint additional pair, the fourth scale faintly 3-nerved.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Known only from the type locality.

40. **ARTHROPOGON** Nees, Agrost. Bras. 319. 1829.

Rather rigid grasses, with the leaves mainly toward the base of the stem, and a terminal spreading panicle, the spikelets with a ring of long hairs at the base. Spikelets articulated below the empty scales, solitary along the continuous branches of the panicle, the terminal flower perfect, sometimes with an additional lower staminate one. Scales 4; first and second empty, the former narrowed into an awn, the second longer, broader, and more rigid, obtuse or somewhat 2-toothed at the apex, the midnerve running out into an awn; third scale similar to the second but awnless, and often bearing a palet or staminate flower, or both; fourth scale shorter, awnless, thin and hyaline. Stamens 3. Styles distinct. Stigmas plumose. Caryopsis free, but loosely enclosed in the rigid scales.

Type species, *Arthropogon villosus* Nees.

1. **Arthropogon stipitatus** Hack. Sitz.-ber. Acad. Wien 89[1]: 125. 1884.

Entire plant glabrous, with the exception of the callus of the spikelet. Stems about 2 dm. tall, robust, sheathed, simple, erect, tufted; leaves crowded near the base of the stem and of the innovations; sheaths round, striate; ligule very short, truncate, lacinulate; blades linear, somewhat acute, 5–6 cm. long, 3–4 mm. wide, flat, or when dry somewhat complanate, rigid, green, somewhat broadly white-lined above along the midnerve; panicle obovate, rather lax, erect, 6 cm. long, the branches in 2's–4's, spreading, barbed in the axils, somewhat unequal, the lower about 3 cm. long, naked up to the middle, bearing 3 or 4 spikelets; spikelets shortly pedicelled, contracted at the base into a spike-like callus 2.5 mm. long which is furnished at the base with a tuft of very short hairs, 5 mm. long excluding the callus and awn, linear-oblong, green and flushed with violet, the first scale a little removed from the others, subulate, very gradually narrowed into a scabrous straight spreading awn, 18 mm. long including the awn, the second scale a little exceeding the first, exclusive of the awn, narrowly lanceolate, acute, coriaceo-herbaceous, keeled, 3-nerved, the lateral nerves approximate to the margin, very scabrous on the back, terminating in a very scabrous awn equaling that of the first scale, the third scale a little shorter than the second, empty, membranous below, subherbaceous above, lanceolate, acute, entire, muticous, scabro-punctate on the back, subcarinate, the fourth scale equaling the second, membranous, linear-lanceolate, very acute, muticous, 3-nerved, keeled, glabrous, the fifth (palet?) half as long as the fourth, linear-lanceolate, nerveless, glabrous.

TYPE LOCALITY: Cuba.

DISTRIBUTION: Known only from the type locality. Material of this has not been examined, and the above is drawn from the original description.

Tribe 5. **PANICEAE.** Annual or perennial grasses, with a spicate, racemose, or paniculate inflorescence, the spikelets naked, or enclosed in or surrounded by an involucre, consisting of numerous bristles or spines, or of 2 spiny valves, the involucre persistent or falling with and attached to the spikelets, or the spikelets rarely imbedded in a thick rachis. Spikelets articulated below the empty scales or the subtending involucre, 1- or 2-flowered, one flower in the axil of the terminal scale, perfect, the other, when present, in the axil of the next scale, staminate, or rarely perfect. Scales awnless, rarely awned, normally 4, or 2 or 3 by the suppression of the first and second scales, all but the innermost scale membranous or herbaceous, rarely delicate and hyaline, differing in texture and appearance from the fruiting scale and thinner than it, or rarely the third scale resembling the fourth; first scale usually small or rudimentary, rarely equaling the others, often wanting; second and third scales often as long as the spikelet, the second rarely wanting, the third sometimes enclosing a staminate, rarely a perfect, flower and a palet; fourth or fruiting scale papery, cartilaginous, or hard and bony, varying much in shape, the margins flat and often hyaline, or inrolled, enclosing a palet of similar texture and a perfect flower. Caryopsis with a punctiform hilum.

Spikelets of one kind, hermaphrodite.

Spikelets not sunken in cavities in the rachis, or if so, the rachis not thickened.
- Spikelets naked, not subtended by bristles, nor enclosed in an involucre; apex of the panicle-branches and branchlets sometimes terminating in a bristle.
  - Spikelets with the outer scales awnless.
    - Spikelets of 2 scales, the first and second wanting.
      - Fruiting scale long-acuminate, not indurated. — 53. REIMAROCHLOA.
      - Fruiting scale not long-acuminate, indurated. — 54. PASPALUM.
    - Spikelets of 3 or 4 scales.
      - Perfect flower 1.
        - Fruiting scale not rigid, often dark-colored, papillose, the white hyaline margins not inrolled.

- Palet free at the apex, the summit of the fruiting scale hyaline, and separated from the palet. — 41. LEPTOCORYPHIUM.
- Palet enclosed at the apex.
  - Fruiting scale boat-shaped, its margins narrow; internerves of the outer scales deeply folded and clothed with long hairs. — 42. ANTHAENANTIA.
  - Fruiting scale convex, with the margins broadly hyaline.
    - Inflorescence of slender 1-sided racemes.
      - Spikelets long-silky, the fruiting scale lanceolate-acuminate. — 43. VALOTA.
      - Spikelets shortly pubescent or glabrous, the fruiting scale elliptic. — 44. SYNTHERISMA.
    - Inflorescence a capillary panicle. — 45. LEPTOLOMA.
- Fruiting scale rigid, indurated (or if thin the margins not hyaline), the margins often inrolled.
  - Spikelets strongly tuberculate-hispid when mature, laterally compressed. — 47. ECHINOLAENA.
  - Spikelets otherwise.
    - Alternate spikelets facing in opposite ways. — 46. THRASYA.
    - Alternate spikelets not facing in opposite ways.
      - Spikelets with the back of the fruiting scale turned away from the rachis of the spike-like racemes.
        - Spikelets without a basal callus.
          - Spikelets swollen on the inner side and fitting into alternate excavations, the first scale as long as the spikelet or nearly so. — 48. MESOSETUM.
          - Spikelets otherwise, the first scale not more than one fourth as long as the spikelet.
            - Spikelets of 4 scales; racemes racemosely arranged. — 50. BRACHIARIA.
            - Spikelets of 3 scales, the first wanting; arrangement of racemes otherwise, or rarely racemose.
              - Racemes naked, the spikelets superficial. — 51. ANASTROPHUS.
              - Racemes tuberculate-hispid, the spikelets often immersed in the rachis. — 52. AXONOPUS.
        - Spikelets with a ring-like basal callus formed of the first scale and rachilla-internode. — 49. ERIOCHLOA.
      - Spikelets with the back of the fruiting scale turned toward the rachis of the spike-like racemes, or spikelets long-pedicellate and paniculate.
        - Spikelets of 3 scales, plano-convex, in spike-like racemes. — 54. PASPALUM.
        - Spikelets of 4 scales, usually bi-convex, commonly in panicles.
          - Spikelets in spike-like racemes, obtuse. — 54. PASPALUM.
          - Spikelets in panicles, bi-convex, or if plano-convex and in racemes, then acute.
            - Second and third scales not indurated, like the first in texture.
              - Outer scales unequal, not entirely enclosing the spikelet.
                - Fruiting scale indurated, enclosing the palet.
                  - Second scale not saccate at the base.
                    - Stems herbaceous, not woody nor bamboo-like.
                      - Fruiting scale without appendages, its inrolled margins clasping the palet.
                        - Palet of the third scale not enlarged. — 55. PANICUM.
                        - Palet of third scale enlarged, forcing the spikelet open. — 56. STEINCHISMA.
                      - Fruiting scale with lateral basal appendages or excavations, its margins commonly not inrolled. — 57. ICHNANTHUS.
                    - Stems usually woody, bamboo-like; spikelets with the outer scales papery. — 58. LASIACIS.
                  - Second scale large, saccate at the base, many-nerved. — 59. SACCIOLEPIS.

Fruiting scale membranous, not enclosing the palet above. 60. HYMENACHNE.
Outer scales equal, entirely enclosing the dorsally compressed spikelet. 61. HOMOLEPIS.
Second and third scales leathery; first scale with the margins united below, adnate to the stipe-like internode. 62. SCUTACHNE.
Perfect flowers 2. 63. ISACHNE.
Spikelets with 1 or more of the outer scales awned, or if merely pointed, then the palet of the fruiting scale free.
First scale of the spikelet without a distinct callus.
Spikelets pubescent with long silky hairs, the first scale minute and distant from the others. 67. TRICHOLAENA.
Spikelets otherwise.
Third scale with the longest awn, the awns of the second and first successively shorter; fertile palet free at tip. 65. ECHINOCHLOA.
Third scale with the shortest awn or awnless, the awns of the second and first successively longer; fertile palet not free at tip. 64. OPLISMENUS.
First scale with a distinct callus.
Callus pedicel-like. 66. CHAETIUM.
Callus ring-like. 49. ERIOCHLOA.
Spikelets not naked.
Spikelets or some of them subtended by 1 or more bristles.
Bristles persistent.
Spikelets deciduous.
Bristles barbed; palet of the third scale not enlarged at maturity.
Second and third scales many-nerved, broad, the former saccate and auriculate, the latter lyre-shaped. 68. SETARIOPSIS.
Second and third scales not as above. 69. CHAETOCHLOA.
Bristles smooth, sticky; palet of the third scale winged at maturity. 70. IXOPHORUS.
Spikelets persistent. 71. PENNISETUM.
Bristles deciduous, attached to the spikelets.
Bristles numerous.
Bristles delicate, not thickened at the base, often plumose. 71. PENNISETUM.
Bristles rigid, thickened at the base. 72. CENCHROPSIS.
Bristle 1. 73. PARATHERIA.
Spikelets enclosed in an involucre of 2 valves which is deciduous with them. 74. CENCHRUS.
Spikelets sunken in the thickened rachis of a flat spike. 75. STENOTAPHRUM.

Spikelets of 2 kinds.

Spikelets perfect, aerial and subterranean, the latter on short branches and perfecting fruit, the former usually sterile. 76. AMPHICARPON.
Spikelets unisexual; plants monoecious.
Stems of 1 kind, leafy.
Inflorescence terminal on the stem or leafy branches, bearing the pistillate spikelets in the upper, the staminate in the lower portions. 77. OLYRA.
Inflorescence axillary, or if a terminal panicle is present it is always staminate.
Fruiting scale laterally compressed, gibbous above. 78. LITHACHNE.
Fruiting scale dorsally compressed, lanceolate. 79. RADDIA.
Stems of 2 kinds, one leafy and sterile, the other leafless and bearing 2 digitate slender racemes, one staminate, the other pistillate. 80. MNIOCHLOA.

41. **LEPTOCORYPHIUM** Nees, Agrost. Bras. 83. 1829.

Erect perennial grasses with numerous spikelets arranged in a narrow contracted panicle. Spikelets articulated to the pedicel below the scales, 1-flowered, lanceolate. Scales 3 (the first wanting); outer 2 empty, clothed externally with long hairs, the second shorter than the third; fourth or fruiting scale about equaling the third scale, minutely papillose, not indurated when mature, chestnut, with the summit delicate and hyaline, lacerate or sometimes ciliate, the white flat margins hyaline down to about the middle, bearing in its axil a palet, similar in texture to the scale, with a free apex, and enclosing a perfect flower.

Type species, *Leptocoryphium lanatum* Nees.

1. **Leptocoryphium lanatum** (H.B.K.) Nees, Agrost. Bras. 84. 1829.

Paspalum lanatum H.B.K. Nov. Gen. & Sp. 1 : 94. 1815.
Milium lanatum R. & S. Syst. Veg. 2 : 322. 1817.
Anthaenantia lanata Benth. Jour. Linn. Soc. 19 : 39. 1881.

Stems up to 1 m. tall or more, erect; leaf-sheaths glabrous; blades up to 3 dm. long and 4 mm. wide, glabrous, except sometimes on the upper surface and near the base; panicle contracted, 1–2 dm. long, its branches erect or nearly so; spikelets 4–5 mm. long.

TYPE LOCALITY: Venta del Camaron, near Acapulco, Guerrero.
DISTRIBUTION: Southern Mexico to Costa Rica; Cuba; also in northern South America and Trinidad.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 29.*

42. **ANTHAENANTIA** Beauv. Agrost. 48. 1812.

Aulaxanthus Ell. Bot. S. C. & Ga. 1: 102. 1816.
Aulaxia Nutt. Gen. 1: 47. 1818.

Erect perennial grasses with numerous spikelets arranged in a narrow or contracted panicle. Spikelets articulated to the pedicel below the scales, 1- or 2-flowered, ovate, sometimes shortly acuminate. Scales 3 (the first wanting), the 2 outer equal, or nearly so, membranous, the internerves folded, densely clothed externally with long hairs, empty, or the third one enclosing a palet and sometimes also a staminate flower; fourth or fruiting scale equaling or a little shorter than the third, boat-shaped, membranous, when mature somewhat rigid or slightly indurated and chestnut-brown, enclosing a shorter palet which is not free at the apex, and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Phalaris villosa* Michx.

Leaf-blades linear, the lower ones 3–4 mm. wide; plant often purple or purplish. 1. *A. rufa.*
Leaf-blades narrowed toward the summit, the lower ones 5–10 mm. wide; plant green. 2. *A. villosa.*

1. **Anthaenantia rufa** (Ell.) Schultes, in R. & S. Syst. Veg. Mant. 2: 258. 1824.

Aulaxanthus rufus Ell. Bot. S. C. & Ga. 1: 103. 1816.
Panicum rufum Kunth, Rév. Gram. 35. 1829.
Monachne rufa Bertol. Mem. Accad. Bologna 2: 596. 1850.
Leptocoryphium obtusum Steud. Syn. Gram. 34. 1854.
Leptocoryphium Drummondi C. Muell. Bot. Zeit. 19: 314. 1861.
Anthaenantia rufa scabra Nash, in Small, Fl. SE. U. S. 79. 1903.

Smooth and glabrous, often purple. Stems 4–10 dm. tall, from a running rootstock; leaf-sheaths shorter than the internodes; blades erect, linear, obtuse, 2–5 mm. wide, those at the base and on the innovations 2–4 dm. long, those on the stem 2 dm. long or less; panicle contracted, 8–20 cm. long, 1–2 cm. broad; spikelets numerous, 3.5–4 mm. long, the second and third scales about equal in length, 5-nerved, the hairs about 1 mm. long, the third enclosing a palet and often also a staminate flower, the fruiting scale as long as or a little shorter than the others.

TYPE LOCALITY: On the Edista River, South Carolina.
DISTRIBUTION: In moist pine lands, South Carolina to Florida and Louisiana.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 336;* 20: *f. 20;* Rep. Comm. Agr. 1888: Bot. *pl. 6;* Ell. Bot. S. C. & Ga. *pl. 6, f. 1;* Mem. Accad. Bologna 2: *pl. 41, f. 1.*

2. **Anthaenantia villosa** (Michx.) Beauv. Agrost. 151. 1812.

Phalaris villosa Michx. Fl. Bor. Am. 1: 43. 1803.
Panicum Erianthos Poir. in Lam. Encyc. Suppl. 4: 284. 1816.
Aulaxanthus ciliatus Ell. Bot. S. C. & Ga. 1: 102. 1816.
Panicum ignoratum Kunth, Rév. Gram. 35. 1829.
Oplismenus Erianthos Kunth, Rév. Gram. 45. 1829.

Smooth and glabrous, green. Stems 5–15 dm. tall, from a running rootstock; leaf-sheaths shorter than the internodes; blades erect, narrowed toward the apex, acute or somewhat obtuse, 3 dm. long or less, 1 cm. wide or less; panicle contracted, 8–20 cm. long, 1–2 cm. broad; spikelets 3–4 mm. long, the 2 outer scales 5-nerved, the hairs about 0.6 mm. long, the second scale equaling or a little shorter than the third which encloses a palet and sometimes also a staminate flower, the fruiting scale about equaling the third.

TYPE LOCALITY: In sandy woods, Carolina.
DISTRIBUTION: South Carolina to Florida and Texas.
ILLUSTRATIONS: Beauv. Agrost. *pl. 10, f. 7;* Bull. U. S. Dep. Agr. Agrost. 17: *f. 337;* Kunth, Rév. Gram. *pl. 20;* Beal, Grasses N. Am. 2: *f. 23.*

43. VALOTA Adans. Fam. Pl. 2 : 495. 1763.

Trichachne Nees, Agrost. Bras. 85. 1829.

Perennial, usually tufted, grasses, with the spikelets borne in pairs in 2 rows on one side of slender solitary or fascicled racemes which are erect or nearly so, and arranged in a narrow usually dense panicle. Spikelets articulated to the pedicel below the scales, 1-flowered, usually in pairs, rarely single, lanceolate. Scales 4; first scale minute or rudimentary, glabrous; second and third scales generally equaling or exceeding the fruiting scale, or the second rarely shorter than it, 3–5-nerved, copiously pubescent with long silky hairs which commonly extend beyond the spikelet, rarely only a little exceeding it; fourth or fruiting scale lanceolate, generally brown, not rigid, with the broad flat hyaline margins not inrolled, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose. Caryopsis elliptic, in cross-section unequally bi-convex.

Type species, *Andropogon insularis* L.

Second scale of the spikelet equaling or longer than the fruiting scale ; spikelets crowded.
  Hairs extending much beyond the spikelets, which are 3 mm. long or more.
    Panicle tawny ; spikelets 4–4.5 mm. long. 1. *V. insularis.*
    Panicle silvery or purplish ; spikelets 3–4 mm. long. 2. *V. saccharata.*
  Hairs barely extending beyond the spikelets, which are 2.5–3 mm. long. 3. *V. Hitchcockii.*
Second scale of the spikelet shorter than the fruiting scale ; spikelets scattered. 4. *V. Pittieri.*

1. Valota insularis (L.) Chase, Proc. Biol. Soc. Wash. 19 : 188. 1906.

Andropogon insularis L. Syst. Nat. ed. 10. 1304. 1759.
Panicum lanatum Rottb. Acta Lit. Univ. Hafn. 1 : 269. 1778.
Milium villosum Sw. Prodr. 24. 1788.
Panicum leucophaeum H.B.K. Nov. Gen. & Sp. 1 : 97. 1815.
Trichachne insularis Nees, Agrost. Bras. 86. 1829.
Panicum Duchaissingii Steud. Syn. Gram. 93. 1854.
Tricholaena insularis Griseb. Fl. Brit. W. Ind. 557. 1864.
Syntherisma insulare Millsp. Field Columb. Mus. Publ. Bot. 1 : 473. 1902.

Stems up to 1 m. tall or more, smooth and glabrous; leaf-sheaths overlapping, at least below, glabrous or pubescent; blades up to 3 dm. long and 2 cm. wide, glabrous; panicle up to 4 dm. long, narrow, its usually numerous branches erect; spikelets 4–4.5 mm. long, exclusive of the long hairs, lanceolate, the first scale minute, the second and third scales 5-nerved, pubescent with very long rusty hairs, the second scale about as long as the fruiting scale, the third exceeding it, the fruiting scale chestnut-brown, lanceolate, with a long-acuminate green tip.

TYPE LOCALITY : Jamaica.
DISTRIBUTION : Florida and Texas, and in tropical America.
ILLUSTRATIONS : Sloane, Hist. Jam. *pl. 14, f. 2 ;* Bull. U. S. Dep. Agr. Agrost. 7 : *f. 42 ;* Trin. Ic. *pl. 220 ;* Field Columb. Mus. Publ. Bot. 3 : 24, *f.*

2. Valota saccharata (Buckl.) Chase, Proc. Biol. Soc. Wash. 19 : 188. 1906.

Panicum lachnanthum Torr. Pacif. R. R. Rep. 7[3] : 21. 1857. Not *P. lachnanthum* Hochst. 1855.
Panicum saccharatum Buckl. Prel. Rep. Geol. & Agr. Surv. Tex. App. 2. 1866.
Trichachne saccharata Nash, in Small, Fl. SE. U. S. 83. 1903.

Stems up to 8 dm. tall, tufted, smooth and glabrous; leaf-sheaths glabrous or hirsute; blades up to 1.5 dm. long, 3–5 mm. wide, linear-lanceolate, acuminate, glabrous or pubescent; panicle narrow, usually dense, up to 1.5 dm. long, its branches erect; spikelets 3–4 mm. long, exclusive of the long hairs which are commonly silvery-white, sometimes purplish, the first scale small or minute, the second scale lanceolate, as long as the fruiting scale and a little shorter than the third, 3-nerved, long-hairy, the third scale ovate-lanceolate to ovate, 5-nerved, acuminate, the fruiting scale brown when mature, lanceolate to ovate, acuminate, the tip white.

TYPE LOCALITY : Middle Texas.
DISTRIBUTION : Colorado to Texas and northern Mexico.
ILLUSTRATIONS : Bull. U. S. Dep. Agr. Agrost. 17 : *f. 342 ;* Bull. U. S. Dep. Agr. Bot. 12[1] : *pl. 4.*

3. **Valota Hitchcockii** Chase, Proc. Biol. Soc. Wash. **24**: 110. 1911.

Panicum tenerrimum L. Dewey, in Coult. Contr. U. S. Nat. Herb. **2**: 503. 1894. Not *P. tenerrimum* Kunth, 1829.

Stems tufted, 2–5 dm. tall, slender, glabrous, the lower nodes often pubescent; leaf-sheaths glabrous or sparingly hirsute; blades up to 6 cm. long, 2–3 mm. wide, flat, glabrous beneath, usually shortly pubescent on the upper surface and with a few long hairs near the base, with a narrow white cartilaginous margin; panicle commonly of 3–5 racemes, rarely fewer, the racemes 2–3 cm. long, erect; spikelets usually in pairs, sometimes single, on rather long pedicels, 2.5–3 mm. long, lanceolate, the first scale minute, triangular, the second and third scales densely pubescent, especially on the margins, with long purple hairs, the second 3-nerved, about equaling the fruiting scale, the third 5-nerved, a little longer than the second, the fruiting scale yellowish-brown, about 2.25 mm. long, a little shorter than the second scale, elliptic, acuminate.

TYPE LOCALITY: On dry prairie soil, San Antonio, Texas.
DISTRIBUTION: Central and western Texas and adjacent Mexico.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 17: *f. 343*.

4. **Valota Pittieri** (Hack.) Chase, Proc. Biol. Soc. Wash. **19**: 188. 1906.

Panicum Pittieri Hack. Oesterr. Bot. Zeits. 51: 367. 1901.

Stems up to 1 m. tall, glabrous, leafy, the nodes black; leaf-sheaths papillose-hispid; blades 7–10 cm. long, 7–10 mm. wide, papillose-hirsute; inflorescence 1–1.5 dm. long, of 8–12 slender ascending racemes, 7–12 cm. long; spikelets usually in pairs, sometimes single, about 3 mm. long, exclusive of the hairs, lanceolate, the first scale rudimentary, the second and third scales pubescent with long hairs, especially on the margins, the 3-nerved second about three fourths as long as the fruiting scale, the 5-nerved third about equaling it, the fruiting scale brown, about 3 mm. long, lanceolate, acuminate.

TYPE LOCALITY: Rio Tirili, near San José, Costa Rica.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Panicum obtectum J. Presl, in Presl, Rel. Haenk. 1: 301. 1830. Fournier refers this to *Tricholaena* (to which he also refers *Valota insularis* Chase), citing a specimen collected in San Luis de Potosi by Virlet. Until this specimen can be seen, this reference must remain doubtful.

44. **SYNTHERISMA** Walt. Fl. Car. 76. 1788.

Digitaria Haller, Stirp. Helv. **2**: 244. 1768. Not *Digitaria* Heister, 1763.
Gramerium Desv. Opusc. 61. 1831.
Sanguinaria Bubani, Fl. Pyren. 4: 256. 1901. Not *Sanguinaria* L. 1753.

Annual grasses with flat leaf-blades and an inflorescence of slender spike-like racemes which are disposed in whorls, or scattered but approximate, at the summit of the stem. Spikelets articulated to the pedicel below the scales, 1-flowered, lanceolate or elliptic, solitary, or in 2's or 3's, nearly sessile or on short pedicels, arranged in two rows on one side of a 3-angled rachis which usually has the lateral angles winged. Scales 3 or 4; first scale minute or wanting; second and third scales glabrous, or pubescent with short hairs, the second equaling or shorter than the third; fourth or fruiting scale lanceolate or elliptic, acute, white, yellowish, greenish, or brown, papillose, becoming somewhat indurated but not rigid, the white hyaline margins not inrolled, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose. Grain subelliptic, in cross-section plano-convex or somewhat concavo-convex.

Type species, *Syntherisma praecox* Walt.

Fruiting scale deep-brown; first scale wanting, or rarely present as an inconspicuous rudiment.
  Rachis of the racemes with the angles wingless.
    Second and third scales pubescent with appressed glandular-tipped hairs.
      Racemes usually short, 2–10 cm. long; spikelets less than 2 mm. long. 1. *S. filiforme*.
      Racemes usually more than 10 cm. long, rarely shorter; spikelets 2.25 mm. long or more.

Pubescence on the sheaths spreading; racemes commonly more than 5. — 2. *S. villosum.*
Pubescence on the sheaths appressed or nearly so; racemes commonly less than 4. — 3. *S. leucocomum.*
Second and third scales glabrous.
Second scale half as long as the spikelet, rounded or truncate at the apex. — 4. *S. gracillimum.*
Second scale more than half as long as the spikelet, sparingly pilose at the acute apex. — 5. *S. Bakeri.*
Rachis of the racemes with the lateral angles winged, thus making it appear flat.
Spikelets more than 2 mm. long.
Rachis about 1 mm. wide; leaf-blades glabrous. — 6. *S. Ischaemum.*
Rachis about 0.5 mm. wide; leaf-blades hirsute. — 7. *S. badium.*
Spikelets 1.25–1.5 mm. long. — 8. *S. paniceum.*
Fruiting scale white, yellowish, or greenish; first scale usually present, commonly wanting in nos. 9 and 10.
Rachis of the racemes with the angles wingless; second scale as long as the spikelet.
Spikelets glabrous. — 9. *S. Simpsoni.*
Spikelets pubescent. — 10. *S. velutinum.*
Rachis of the racemes with the lateral angles broadly winged; second scale shorter than the spikelet.
Spikelets about 1.5 mm. long; pedicels terete, glabrous. — 11. *S. serotinum.*
Spikelets more than 2 mm. long; pedicels 3-angled, the angles strongly hispidulous.
Rachis of the racemes commonly 0.5 mm. wide or less, often bearing scattered long hairs; spikelets 1.75–2.5 mm. long. — 12. *S. digitatum.*
Rachis of the racemes usually more than 0.7 mm. wide; spikelets more than 2.5 mm. long.
Spikelets about 2.5 mm. long, rarely up to 3 mm.; third scale with the nerves strongly hispid above the middle. — 13. *S. sanguinale.*
Spikelets commonly 3 mm. long or more; third scale with the nerves smooth or nearly so. — 14. *S. marginatum*

1. **Syntherisma filiforme** (L.) Nash, Bull. Torrey Club 22: 420. 1895.

Panicum filiforme L. Sp. Pl. 57. 1753.
Paspalum filiforme Flügge, Gram. Monog. 139. 1810.
Digitaria filiformis Muhl. Descr. Gram. 131. 1817.
Panicum curvinerve Hack. Oesterr. Bot. Zeits. **51**: 335. 1901.

Stems 1.5–7 dm. tall, slender, erect, simple or somewhat branched; leaf-sheaths flattened, keeled, at least toward the apex, papillose-hirsute, or the uppermost one glabrous; blades up to 2 dm. long, 1–4 mm. wide, flat, erect, usually glabrous on the lower surface, the upper surface, as well as the margins, rough, papillose-hirsute at the base; panicle long-exserted, the axis 1–3 cm. long; racemes 2–5, 2–10 cm. long, erect or ascending; spikelets about 1.8 mm. long, elliptic, acute, in pairs on hispidulous 3-angled pedicels, the first scale wanting, the second and third scales white or purplish, the second 3-nerved, the third 7-nerved, both pubescent with long glandular-tipped hairs, the fruiting scale deep chestnut-brown at maturity, striate, obtusely apiculate.

TYPE LOCALITY: North America.
DISTRIBUTION: New Hampshire to Michigan and Kansas, and south to Florida and Mexico; New Providence; Haïti; Cuba.
ILLUSTRATIONS: Britt. & Brown, Ill. Fl. *f. 242;* Trin. Ic. *pl. 148;* Torr. Fl. N. Y. *pl. 147;* Bull. Tenn. Exp. Sta. **7**: *f. 28;* Field Columb. Mus. Publ. Bot. **3**: 26, *f.*

2. **Syntherisma villosum** Walt. Fl. Car. 77. 1788.

Digitaria pilosa Michx. Fl. Bor. Am. **1**: 45. 1803.
Digitaria villosa Pers. Syn. Pl. **1**: 85. 1805.
Paspalum carolinianum Poir. in Lam. Encyc. Suppl. **4**: 311. 1816.

Stems densely tufted, 6–14 dm. tall, slender, simple or somewhat branched; leaf-sheaths flattened, keeled, at least toward the apex, the lower densely papillose-hirsute, the uppermost one sparingly so or glabrous; blades up to 2.5 dm. long, 3–6 mm. wide, flat, erect or nearly so, smooth beneath, rough above, the lower papillose-hirsute; panicle long-exserted, the axis 3–9 cm. long; racemes 2–8, commonly more than 5, 4–20 cm. long, generally 12–15 cm., erect or ascending; spikelets 2.5 mm. long, elliptic, acute, on 3-angled sparingly hispidulous pedicels, usually in 3's, the first scale wanting, the second and third scales pubescent with long appressed

glandular-tipped hairs, the second 3-nerved, the third 7-nerved, the fruiting scale deep chestnut-brown when mature, elliptic to elliptic-lanceolate, striate, apiculate.

TYPE LOCALITY: South Carolina.
DISTRIBUTION: Virginia to Missouri, and south to Florida and Mexico; Cuba.
ILLUSTRATION: Ell. Bot. S. C. & Ga. *pl. 7, f. 4.*

3. **Syntherisma leucocomum** Nash, Bull. Torrey Club **25**: 295. Je 1898.

Panicum phaeothrix Scrib. Bull. U. S. Dep. Agr. Agrost. **7**: 58. 1898. Not *P. phaeothrix* Trin. 1827.
Panicum leucocomum Scribn. Bull. U. S. Dep. Agr. Agrost. **7**: ed. 2. 58. Jl 1898.

Stems 1 m. or less tall, rather slender, erect; leaf-sheaths somewhat compressed, keeled, at least toward the apex, coarsely striate, the lower densely hirsute with nearly appressed hairs; blades erect, flat, often involute when dry, glabrous on the lower surface, on the upper surface rough and sparingly pubescent at the base, 3 mm. or less broad, those on the stem 1.5–2.5 dm. long, those on the innovations 1–4 dm. long; panicle exserted, the axis 4–6 cm. long; racemes 2–4, 2–2.5 dm. long, erect or nearly so, the rachis 3-angled; spikelets 2.25–2.5 mm. long, elliptic, acute, on hispidulous 3-angled pedicels, usually in 3's, the first scale wanting, the second and third scales white, pubescent with long glandular-tipped hairs, the second 3-nerved, the third 7-nerved, the fruiting scale brown at maturity, striate, apiculate.

TYPE LOCALITY: High pine land, Lake Ella, Florida.
DISTRIBUTION: Florida and Cuba.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 40.*

4. **Syntherisma gracillimum** (Scribn.) Nash, Bull. Torrey Club **25**: 295. 1898.

Panicum gracillimum Scribn. Bull. Torrey Club **23**: 146. 1896.

Stems tufted, slender, 6–8 dm. tall; leaf-sheaths loosely embracing the stem, the lower, as well as those on the innovations, somewhat hirsute with ascending-appressed hairs; blades 2 mm. wide or less, smooth on the lower surface, rough on the upper and more or less hairy at the very base, those on the innovations 3–4 dm. long, those on the stem 1.5 dm. or less; panicle long-exserted, the axis 3–6 cm. long; racemes 2, or rarely 3, about 3 dm. long, erect, the rachis 3-angled; spikelets slightly exceeding 2 mm. long, elliptic, acute, in 2's–4's, irregularly scattered, on hispidulous 3-angled pedicels, the first scale wanting, the second and third scales glabrous, white, the second 3-nerved, half as long as the spikelet or less, rounded or truncate at the apex, the third 5-nerved, acute, slightly shorter than the spikelet, the fruiting scale deep seal-brown when mature, conspicuously longitudinally striate, the apex apiculate.

TYPE LOCALITY: High pine land, Eustis, Florida.
DISTRIBUTION: Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 39.*

5. **Syntherisma Bakeri** Nash, Bull. Torrey Club **25**: 296. 1898.

Stems tufted, 1 m. tall or less, simple, erect; leaf-sheaths somewhat compressed, densely hirsute with ascending hairs; blades 2 mm. wide or less, involute when dry, smooth on both surfaces, glabrous beneath, also above except at the very base where they are densely pubescent with long hairs, those on the innovations 2–4 dm. long, on the stems 1–2.5 dm.; panicle long-exserted, the axis 4–7 cm. long; racemes usually 3, sometimes 2, commonly somewhat branched at the base, 14–22 cm. long, the rachis 3-angled, the angles not winged but strongly hispidulous; spikelets about 2.25 mm. long, elliptic, usually in 3's, on successively longer pedicels which are 3-angled, the angles strongly hispidulous, the first scale wanting, the second about four fifths as long as the spikelet, acute or acutish, sparsely pilose at the apex, otherwise glabrous, 3-nerved, the third a little shorter than the fruiting scale, 7-nerved, glabrous, the fruiting scale deep chestnut-brown when mature, elliptic, obtusely apiculate, rather faintly striate.

TYPE LOCALITY: Grasmere, Florida.
DISTRIBUTION: Florida.

6. **Syntherisma Ischaemum** (Schreb.) Nash.

Panicum lineare Krock. Fl. Sil. **1**: 95. 1787. Not *P. lineare* L. 1762.
Panicum Ischaemum Schreb.; Schweigger, Spec. Fl. Erlang. 16. 1804.
Digitaria humifusa Pers. Syn. Pl. **1**: 85. 1805.

Paspalum ambiguum DC. Fl. Fr. **3**: 16. 1805.
Syntherisma glabrum Schrad. Fl. Germ. 163. 1806.
Panicum glabrum Gaudin, Agrost. Helv. 1: 22. 1811.
Panicum glabrum mississippiense Gatt. Tenn. Fl. 95. 1887.
Syntherisma lineare Nash, Bull. Torrey Club **22**: 420. 1895.
Panicum lineare mississippiense Gatt.; Beal, Grasses N. Am. **2**: 111. 1896.
Syntherisma lineare mississippiense Nash, Bull. Torrey Club **25**: 300. 1898.
Syntherisma humifusum Rydb. Mem. N. Y. Bot. Gard. **1**: 469. 1900.

Stems 2–5 dm. tall, slender, at length branched at the base, finally prostrate and forming large mats, smooth and glabrous; leaf-sheaths flattened, smooth, glabrous; blades up to 1.5 dm. long, 2.5–6 mm. wide, flat, erect or nearly so; panicle finally long-exserted, the axis 1–3 cm. long; racemes 2–5, 2–8 cm. long, finally widely spreading; spikelets slightly exceeding 2 mm. long, elliptic, acutish, on 3-angled pedicels which are sparingly or not at all hispid at the apex, usually in pairs, the outer scales usually purplish or purple, the first scale wanting, or sometimes present as a scarious rudiment, the second and third scales about equal, pubescent, the second 3-nerved, the third 7-nerved, the fruiting scale deep chestnut-brown when mature, striate, acute.

TYPE LOCALITY: Erlangen, Germany.
DISTRIBUTION: Nova Scotia to Ontario, South Dakota, and Colorado, and south to Florida and Texas. Introduced.
ILLUSTRATIONS: Schrad. Fl. Germ. *pl. 3, f. 6*; Leers, Fl. Herborn. *pl. 2, f. 6*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 37*; Britt. & Brown, Ill. Fl. *f. 241*; Trin. Ic. *pl. 149*; Bull. Tenn. Exp. Sta. **7**: *f. 27*.

7. **Syntherisma badium** (Scribn. & Merr.) Chase, Proc. Biol. Soc. Wash. **19**: 191. 1906.

Panicum badium Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. **24**: 12. 1901.

Stems tufted, up to 1 m. tall, glabrous; leaf-sheaths glabrous; blades erect, up to 8 cm. long, 3–5 mm. wide, hirsute, especially on the lower surface; racemes 2 or 3, erect, 4–8 cm. long; spikelets about 2.5 mm. long, in pairs, the one on a short, the other on a longer pedicel, the first scale wanting or rarely present as a mere rudiment, the second and third scales pubescent with glandular-tipped hairs, the second 5-nerved, about equaling the fruiting scale, the third 3-nerved, narrower than the second and shorter than the spikelet, the fruiting scale deep-brown, strongly papillose-striate.

TYPE LOCALITY: Sierra de San Felipe, Oaxaca.
DISTRIBUTION: Jalisco, Michoacan, and Oaxaca.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **24**: *f. 3*.

8. **Syntherisma paniceum** (Sw.) Nash.

Milium paniceum Sw. Prodr. 24. 1788.
Agrostis jamaicensis Poir. in Lam. Encycl. Suppl. 1: 258. 1810.
Digitaria violascens Link, Hort. Berol. 1: 229. 1827.
Panicum violascens Kunth, Rév. Gram. 33. 1829.

Stems tufted, up to 4.5 dm. tall, smooth and glabrous; leaf-sheaths smooth and glabrous; blades erect or ascending, linear, long-acuminate, smooth and glabrous, up to 1 dm. long and 6 mm. wide; racemes in a terminal whorl of 3–5, rarely fewer, sometimes with 1 or 2 additional racemes below, up to 1 dm. long, erect or ascending, the rachis winged, about 0.75 mm. wide; spikelets on hispidulous pedicels, commonly in pairs, sometimes in 3's, about 1.3 mm. long, white, acute, elliptic, the first scale wanting, the second and third scales about equal and equaling or a trifle shorter than the fruiting scale, appressed-pubescent, 3–5-nerved, the fruiting scale deep-brown, acute.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Colorado; northern Mexico; Bermuda; Jamaica; Trinidad; also in the Old World tropics.

9. **Syntherisma Simpsoni** (Vasey) Nash, Bull. Torrey Club **25**: 297. 1898.

Panicum sanguinale Simpsoni Vasey, Contr. U. S. Nat. Herb. **3**: 25. 1892.
Panicum Simpsoni Beal, Grasses N. Am. **2**: 109. 1896.

Stems 8–12 dm. tall, branching, at first erect, finally prostrate at the base and rooting at the lower nodes; leaf-sheaths loosely embracing the stem, copiously papillose-hirsute, the

hairs widely spreading; blades 7–30 cm. long, 5 mm. wide or less, flat, ascending, papillose-hirsute; panicle long-exserted, the axis 4–6 cm. long; racemes 6–8, 10–13 cm. long, erect or ascending, scattered, or sometimes approximate in pairs, the angles hispidulous and not winged; spikelets a little more than 3 mm. long, elliptic-lanceolate, acute, on hispidulous 3-angled pedicels, the scales glabrous, the first one wanting, or sometimes present as a minute rudiment, the second and third scales about equal, the former 5-, the latter 7-nerved, the fruiting scale a little shorter than the third, elliptic, acute, yellowish-white, finely striate.

TYPE LOCALITY: Manatee, Florida.
DISTRIBUTION: Florida and Cuba.

10. **Syntherisma velutinum** (DC.) Chase, Proc. Biol. Soc. Wash. **19**: 191. 1906.

Milium velutinum DC. Cat. Hort. Monsp. 126. 1813.
Paspalum velutinum Kunth, Rév. Gram. 27. 1829.

Stems up to 12 dm. tall, glabrous, rooting at the lower nodes; leaf-sheaths softly pubescent, especially the lower ones; blades 6–10 cm. long, 4–7 mm. wide, softly pubescent; inflorescence long-exserted, the axis up to 6 cm. long; racemes 7–15, erect or ascending, 6–10 cm. long, the rachis with the lateral angles wingless; spikelets 2.5–3 mm. long, in pairs, one on a short, the other on a very long, pedicel, elliptic, acute or obtuse, the first scale wanting, the second scale a trifle shorter than the spikelet, 5-nerved, pubescent, the third scale about as long as the spikelet, 5-nerved, pubescent, the fruiting scale elliptic, greenish, acute.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Texas and southern Mexico.

11. **Syntherisma serotinum** Walt. Fl. Car. 76. 1788.

Digitaria serotina Michx. Fl. Bor. Am. 1: 46. 1803.
Paspalum serotinum Flügge, Gram. Monog. 145. 1810.
Panicum serotinum Trin. Mém. Acad. St. Petersb. VI. 3^2: 203. 1834.

Stems 2–5 dm. long, tufted, at first simple and erect, at length much branched, prostrate, and rooting at the lower nodes; leaf-sheaths a little flattened, the lower ones densely papillose-hirsute with spreading hairs; blades up to 10 cm. long, 3–10 mm. wide, flat, lanceolate, more or less ascending, pubescent on both surfaces with spreading hairs, the pubescence of two kinds, one short and soft, the other longer, rigid, arising from papillae; panicle exserted, the axis 1–2 cm. long; racemes 2–6, 2.5–10 cm. long, ascending or nearly erect, alternate, or sometimes approximate in pairs, the lateral angles of the rachis broadly winged; spikelets about 1.5 mm. long, elliptic, acute, on pedicels which are terete or nearly so and glabrous, usually in pairs, sometimes in 3's, the first scale wanting, the second about one third as long as the spikelet, 3-nerved, the third scale a little shorter than the fruiting scale, both pubescent with long appressed hairs, the fruiting scale white, ovate-lanceolate, acute.

TYPE LOCALITY: South Carolina.
DISTRIBUTIONS: Pennsylvania and Delaware to Florida, west to Mississippi; Cuba.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 38*; Britt. & Brown, Ill. Fl. 3: 496, *f. 241a*; Kunth, Rév. Gram. *pl. 206*.

12. **Syntherisma digitatum** (Sw.) Hitchc. Contr. U. S. Nat. Herb. **12**: 142. 1908.

Milium digitatum Sw. Prodr. 24. 1788.
Agrostis digitata Poir. in Lam. Encyc. Suppl. 1: 258. 1810.
Axonopus digitatus Beauv.; R. & S. Syst. Veg. 2: 317. 1817.
Digitaria setigera Roth; R. & S. Syst. Veg. 2: 474. 1817.
Panicum horizontale G. Meyer, Fl. Esseq. 54. 1818.
Digitaria jamaicensis Spreng. Syst. 1: 272. 1825.
Digitaria setosa Desv.; Hamilt. Prodr. 6. 1825.
Paspalum digitatum Kunth, Rév. Gram. 24. 1829.
Panicum stipatum J. Presl, in Presl, Rel. Haenk. 1: 297. 1830.
Panicum Hamiltonii Kunth, Enum. 1: 84. 1833.
Syntherisma setosum Nash, Bull. Torrey Club 25: 300. 1898.

Stems 4–10 dm. tall, slender, branching, tufted, at length decumbent at the base and rooting at the lower nodes; leaf-sheaths loosely embracing the stems, densely papillose-hir-

sute with spreading hairs; blades 2–12 cm. long, 2–7 mm. wide, flat, spreading or ascending, papillose-hirsute; panicle long-exserted, its axis 4 cm. long or less; racemes 4–13, 4–13 cm. long, finally widely spreading, usually in a whorl at the base and the remainder alternate or approximately in pairs, the lateral angles of the rachis winged; spikelets 1.75–2.5 mm. long, lanceolate, acuminate, in pairs, occasionally with a delicate basal bristle, on 3-angled pedicels, the angles hispidulous, the first scale minute, triangular, glabrous, the second scale about one half as long as the spikelet, 3-nerved, appressed-pubescent, the third scale 7-nerved, appressed-pubescent, the fruiting scale slightly less than 2 mm. long, noticeably shorter than the third scale, elliptic, greenish when mature.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Florida; Bermuda; Bahamas; tropical America.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. **3**: 26, *f.*

13. **Syntherisma sanguinale** (L.) Dulac, Fl. Hautes-Pyr. 77. 1867.

Panicum sanguinale L. Sp. Pl. 57. 1753.
Digitaria sanguinalis Scop. Fl. Carn. ed. 2. **1**: 52. 1772.
Panicum ciliare Retz. Obs. **4**: 16. 1786.
Syntherisma praecox Walt. Fl. Car. 76. 1788.
Paspalum sanguinale Lam. Tab. Encyc. **1**: 176. 1791.

Stems 1 m. long or less, at first erect, finally prostrate at the base and rooting at the lower nodes; leaf-sheaths loosely embracing the stem, at least the lower densely papillose-hirsute; blades 4–20 cm. long, 4–10 mm. wide, flat, erect or ascending, papillose-hirsute; panicle finally exserted, the axis 1 cm. long or less; racemes 3–10, 5–18 cm. long, erect or ascending, usually digitate, sometimes with an approximate pair or two above or below, the rachis with the angles broadly winged; spikelets about 2.5 mm. long, elliptic-lanceolate, acute, in pairs on 3-angled pedicels, the angles hispidulous, the first scale minute, triangular, glabrous, the second scale about one half as long as the spikelet, ovate-lanceolate, 3-nerved, appressed-pubescent, the third scale about as long as the fruiting scale, 7-nerved, appressed-pubescent, the nerves hispid above, the fruiting scale yellowish-white, acutely apiculate, elliptic-lanceolate.

TYPE LOCALITY: Southern Europe.
DISTRIBUTION: Along roadsides and in fields and waste places, mainly in the north; also throughout the Old World.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 339*; Vasey, Agr. Grasses U. S. *pl. 4*; ed. 2. *pl. 15*; Britt. & Brown, Ill. Fl. *f. 240*; Torr. Fl. N. Y. *pl. 146*; Bull. Tenn. Exp. Sta. **7**: *f. 26.*

14. **Syntherisma marginatum** (Link) Nash.

? *Panicum adscendens* H.B.K. Nov. Gen. & Sp. **1**: 97. 1815.
Digitaria marginata Link, Enum. Hort. Berol. **1**: 102. 1821.
Digitaria fimbriata Link, Hort. Berol. **1**: 226. 1827.
Panicum Linkianum Kunth, Rév. Gram. 33. 1829.
? *Panicum inaequale* Fourn. Mex. Pl. Gram. 17. 1881.
Syntherisma fimbriatum Nash, Bull. Torrey Club **25**: 302. 1898.
Syntherisma barbatum Nash, Bull. Torrey Club **25**: 303. 1898.

Stems 8 dm. long or less, at length prostrate at the base and rooting at the lower nodes; leaf-sheaths densely papillose-hirsute with spreading hairs, rarely glabrous; blades up to 8 cm. long, 3–10 mm. wide, flat, glabrous or pubescent; panicle long-exserted, the axis 2 cm. long or less; racemes 2–9, 2–12 cm. long, erect or ascending, alternate, in pairs or whorls, or various combinations of these, the rachis with the lateral angles winged; spikelets 3–4 mm. long, lanceolate, acute, in pairs on 3-angled pedicels, the first scale minute, triangular, glabrous, the second and third scales pubescent with long hairs which usually become spreading, the second scale 3-nerved, three fifths to four fifths as long as the spikelet, lanceolate-cuneate, the third scale 7-nerved, the fruiting scale elliptic to elliptic-lanceolate, acute, yellowish-white.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Maryland to Utah, south to Florida and Mexico; Bermuda; Bahamas; also in tropical South America.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. **3**: 25, *f.*

45. **LEPTOLOMA** Chase, Proc. Biol. Soc. Wash. **19**: 191. 1906.

Perennials with tufted branching brittle stems, flat leaf-blades, and diffuse panicles which break away readily at maturity. Spikelets articulated to the pedicel below the scales, 1-flowered, fusiform, solitary or rarely in 2's. Scales 3 or 4; first scale minute or obsolete; second

and third scales with the internerves and margins more or less appressed-pubescent, the second 3-nerved, nearly as long as the 7-nerved third, which is empty or encloses a minute palet; fourth or fruiting scale elliptic, acute, brown, papillose, cartilaginous-indurated, the delicate hyaline margins flat, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles long and delicate. Stigmas plumose. Grain plano-convex in cross-section, oblong-elliptic, free.

Type species, *Panicum cognatum* Schultes.

1. **Leptoloma cognatum** (Schultes) Chase, Proc. Biol. Soc. Wash. **19** : 192. 1906.

Panicum divergens Muhl.; Ell. Bot. S. C. & Ga. 1 : 130. 1816. Not *P. divergens* H.B.K. 1815.
Panicum cognatum Schultes, in R. & S. Syst. Veg. Mant. 2 : 235. 1824.
Panicum autumnale Bosc ; Spreng. Syst. 1 : 320. 1825.

Stems tufted, 3–6 dm. long, at first erect, finally prostrate and branched at the base; leaf-sheaths usually longer than the internodes, glabrous or pubescent; blades erect, linear to linear-lanceolate, glabrous or pubescent, the primary ones 3–8 cm. long, 4–7 mm. wide, those on the branches smaller; panicle at first included at the base, finally exserted, as broad as or broader than long, the branches very long and finally spreading; spikelets on pedicels many times their length, 2.5–3 mm. long.

TYPE LOCALITY : Beaufort, South Carolina.
DISTRIBUTION : New Hampshire to Minnesota, south to Florida and northern Mexico.
ILLUSTRATIONS : Bull. U. S. Dept. Agr. Agrost. 17 : *f. 347* ; Britt. & Brown, Ill. Fl. *f. 276*.

46. **THRASYA** H.B.K. Nov. Gen. & Sp. 1 : 120. 1815.

Perennials with slender branched stems, narrow leaf-blades, and an inflorescence of a single terminal spike-like raceme with the rachis winged, the wings partially embracing the spikelets. Spikelets articulated to the pedicel below the scales, with a short basal callus, 1- or 2-flowered, apparently solitary, but actually in pairs on one side of the rachis, the pedicel of the primary spikelet grown to the midnerve of the rachis, alternate spikelets placed successively with the back and front to the rachis. Scales 4; first scale minute, sometimes nerveless and hyaline; second scale membranous, shorter than the spikelet; third scale often hispid, somewhat indurated, the middle part thinner and readily splitting to the base, or merely deeply furrowed, enclosing a palet nearly as long as itself and often also a staminate flower; fourth or fruiting scale indurated, papillose, oblong-elliptic, often with stiff hairs at the summit, the margins thin and flat, more or less pubescent. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Thrasya paspaloides* H.B.K.

1. **Thrasya campylostachya** (Hack.) Chase, Proc. Biol. Soc. Wash. **24** : 115. 1911.

Panicum campylostachyum Hack. Oesterr. Bot. Zeits. 51 : 367. 1901.

Stems up to 1 m. tall, with several naked raceme-bearing branches arising from the uppermost sheath; leaf-sheaths papillose-pubescent; blades up to 1.5 dm. long, 5–8 mm. wide, rigid, pubescent; racemes solitary at the apex of the stem and branches, slender, usually somewhat curved, 4–6 cm. long; spikelets loosely imbricate, spreading from the rachis, about 2.5 mm. long, glabrous, pale-green, the first scale one fourth to one third as long as the spikelet, ovate, obtuse, nerveless, the second scale about three fourths as long as the spikelet, oval, obscurely 3-nerved, obtuse, convex, the third scale as long as the spikelet, obtuse, oval, flat, with a broad furrow down the middle, the fourth or fruiting scale obtuse, oval, very convex, scaberulous.

TYPE LOCALITY : In savannas at Cañas Gordas, Costa Rica.
DISTRIBUTION : Guatemala to Costa Rica.

47. **ECHINOLAENA** Desv. Jour. de Bot. Desv. II. 1 : 75. 1813.

Grasses with freely branching decumbent or creeping stems, and an inflorescence of a single spike-like raceme, or of several rather loose racemes. Spikelets articulated to the

pedicel below the scales, 1- or 2-flowered, in pairs, in two rows along one side of the flat rachis, placed face to face, the primary with a short pedicel and containing a perfect flower, the secondary nearly sessile, usually abortive, rarely developed or wanting. Fertile spikelets laterally compressed. Scales 4; first and second scales firm and broad, acuminate, one or both of them echinate at maturity, the first straight, equaling the spikelet, the second shorter; third scale acuminate, broad, enclosing a palet of nearly equal length and often also a staminate flower; fourth or fruiting scale with a minute basal wing or thickening, indurated, plano-convex, elliptic, with the margins flat, or inrolled only at the summit. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Echinolaena hirta* Desv.

1. **Echinolaena polystachya** H.B.K. Nov. Gen. & Sp. **1**: 119. 1815.

Panicum uncinatum Raddi, Agrost. Bras. 41. 1823.
Panicum heteranthum Link, Hort. Berol. 1: 212. 1827.
Panicum glandulosum Nees, Agrost. Bras. 128. 1829.
Echinolaena Trinii Zoll. & Mor.; Moritzi, Syst. Verz. Zoll. 102. 1846.

Stems up to 8 dm. long, prostrate and branching at the base and rooting at the lower nodes; leaf-sheaths hispid; blades up to 8 cm. long, 1.5 cm. wide, flat, ovate-lanceolate to elliptic, acuminate, hispid; inflorescence up to 1 dm. long, of several rather distant erect or ascending racemes 1–3 cm. long; spikelets 3.5–4 mm. long.

TYPE LOCALITY: On the banks of the Magdalena River, between Tenerife and Zambrano, Colombia.
DISTRIBUTION: Southern Mexico to Brazil.
ILLUSTRATIONS: Trin. Ic. *pl. 216*; H.B.K. Nov. Gen. & Sp. *pl. 679*.

48. **MESOSETUM** Steud. Syn. Gram. 118. 1854.

Slender perennial grasses, with narrow leaf-blades, and a single terminal spike-like raceme. Spikelets articulated to the pedicel below the scales, 1- or 2-flowered, singly disposed in two rows on one side of a 3-angled flexuous rachis which is rarely winged, the back of the fruiting scale turned away from the rachis, the side toward the rachis swollen and fitting into its cavities, the other side flat. Scales 4; first and second 3–5-nerved, the lateral nerves sometimes uniting with the midnerve above, often with stiff hairs on the margin; third scale similar to the outer ones in texture and pubescence, often appearing 2-keeled on account of the weak midnerve and the thin hyaline middle internerve, sometimes enclosing a palet and also a staminate flower; fourth or fruiting scale swollen on the face, its back flat, pointed, somewhat indurated, its margins not hyaline. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Mesosetum cayennense* Steud.

Spikelets copiously hairy; first scale asymmetric, longer than the second. 1. *M. loliiforme*.
Spikelets glabrous or merely hispid; first scale symmetric, shorter than the second. 2. *M. Wrightii*.

1. **Mesosetum loliiforme** (Hochst.) Chase, Bot. Gaz. **51**: 302. 1911.

Panicum loliiforme Hochst.; Steud. Syn. Gram. 56. 1854.

A stoloniferous perennial. Stems tufted, up to 7 dm. tall, erect, pubescent at the nodes; leaf-sheaths papillose-hispid with spreading hairs; blades up to 8 cm. long, 3–6 mm. wide, flat, or involute on the margins, papillose-hispid on both surfaces, hispid-ciliate on the cartilaginous margins; raceme up to 1.5 dm. long, slender, long-exserted; spikelets 3–3.5 mm. long, the outer 3 scales copiously hairy, 3-nerved, the first scale oblong, asymmetric, rounded at the apex, longer than the lanceolate acute second, the third scale broadly elliptic, acute, the fruiting scale broadly lanceolate, acute.

TYPE LOCALITY: Surinam.
DISTRIBUTION: Cuba; also in Surinam.

2. **Mesosetum Wrightii** Hitchc. Contr. U. S. Nat. Herb. **12**: 211. 1909.

Stems 2–4 dm. tall, slender, glabrous, geniculate or creeping at the base; leaf-sheaths ciliate on the margin, hispid at the summit, or the lower ones hispid throughout; blades 3–6

cm. long, 2–3 mm. wide, thick and rigid, flat, or the margins sometimes involute, papillose-ciliate on the cartilaginous margin, hispid; raceme single, usually long-exserted, 2–3 cm. long; spikelets 3–4 mm. long, the first scale glabrous, narrowed to a blunt point, 3-nerved, the second scale a little longer than the first, 5-nerved, narrowed to a blunt apex, hispid at the base with a tuft of hairs and also toward the summit, the third scale 7-nerved, a little gibbous at the base, the fruiting scale smooth and shining, chartaceous, about 2 mm. long.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Cuba.

49. **ERIOCHLOA** H.B.K. Nov. Gen. & Sp. 1: 94. 1815.

Helopus Trin. Fund. Agrost. 103. 1820.
Oedipachne Link, Hort. Berol. 1: 51. 1827.

Annual or perennial grasses, with flat or involute leaf-blades, and an inflorescence of 1-sided racemes. Spikelets with a swollen ring-like callus at the base, articulated to the pedicel below the scales, 1- or 2-flowered, with the back of the fruiting scale turned away from the rachis. Scales 3 or 4; first scale wanting, or rarely rudimentary; second and third scales equal or unequal, the third sometimes with a staminate flower; fourth or fruiting scale shorter, chartaceous, dull and papillose-roughened in transverse ridges, or smooth and shining, obtuse, apiculate, or awned, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose. Grain free, enclosed in the indurated scale and palet.

Type species, *Eriochloa distachya* H.B.K.

Fruiting scale with papillae arranged in transverse lines, dull, not shining.
  Pedicels with no long terminal hairs surrounding the spikelet.
    Tall grasses, mainly annual, with broad flat leaf-blades.
      Fruiting scale obtuse, cuspidate, or with a very short awn.
        Annual; stems finally branching.
          Spikelets 2.5–3 mm. long. 1. *E. ramosa.*
          Spikelets more than 3 mm. long.
            Spikelets 3.5 mm. long, the outer scales awnless. 2. *E. subglabra.*
            Spikelets 4 mm. long or more.
              Spikelets with the outer scales awn-pointed, or rarely short-awned. 3. *E. acuminata.*
              Spikelets with the outer scales awned, the awn sometimes as long as the body of the scale. 4. *E. aristata.*
        Perennial; stems simple. 5. *E. Michauxii.*
      Fruiting scale with an hispidulous awn 0.5–1.25 mm. long. 6. *E. punctata.*
    Low tufted perennial grasses, with narrow involute leaf-blades. 7. *E. filifolia.*
  Pedicels with a tuft of numerous long stiff hairs forming a sort of involucre to the spikelet.
    Leaves glabrous, or if pubescent, not velvety.
      Spikelets 4–4.5 mm. long; racemes several. 8. *E. sericea.*
      Spikelets about 3 mm. long; racemes 1–3. 9. *E. distachya.*
    Leaves velvety-pubescent. 10. *E. Lemmoni.*
Fruiting scale smooth and shining. 11. *E. Nelsoni.*

1. **Eriochloa ramosa** (Retz.) Kuntze, Rev. Gen. 775. 1891.

Milium ramosum Retz. Obs. 6: 22. 1791.
Paspalum annulatum Flügge, Gram. Monog. 133. 1810.
Helopus pilosus Trin. Fund. Agrost. 104. 1820.
Eriochloa annulata Kunth, Rév. Gram. 30. 1829.

With the exception of the spikelets and the nodes, a glabrous annual. Stems up to 8 dm. tall, branched, the nodes puberulent; leaf-blades up to 2 dm. long, 6 mm. wide; inflorescence up to 2 dm. long; racemes 2–5 cm. long, the lower usually on long peduncles; spikelets 2.5–3 mm. long, ovate, acute, the first scale wanting, the second and third scales appressed-hirsute below, about equal, acute, the second sometimes a little longer and awn-pointed, the fruiting scale about three fourths as long as the spikelet, elliptic, minutely papillose-roughened, obtuse, and bearing a short hispidulous awn.

TYPE LOCALITY: India.
DISTRIBUTION: Cuba; common in the tropical and warm temperate regions of the Old World.
ILLUSTRATION: Trin. Fund. Agrost. *pl. 4.*

2. **Eriochloa subglabra** (Nash) Hitchc. Contr. U. S. Nat. Herb. **12** : 208. 1909.

Monachne subglabra Nash, Bull. Torrey Club **30** : 374. 1903.
Eriochloa punctata subglabra Urb. Symb. Ant. **4** : 85. 1903.

Stems 8–12 dm. tall, glabrous, except the densely pubescent nodes; leaf-sheaths ciliate on the margins, the lower ones papillose-hirsute between the nerves; blades flat, ascending, or the longer ones drooping, glabrous, 1–3 dm. long, 7–17 mm. wide; inflorescence about 1 dm. long, the axis hispidulous on the angles; racemes ascending, 4–6 cm. long, the rachis hispidulous on the margins and more or less setiferous, the short pedicels usually with a few long hairs; spikelets about 3.5 mm. long and 1.3 mm. wide, elliptic to ovate-lanceolate, acute, a short semi-circular first scale usually present, the second and third scales about equal, acute, rather sparingly appressed-pubescent, the third scale bearing a staminate flower, the fruiting scale about as long as the spikelet, elliptic, papillose-roughened, mucronate.

TYPE LOCALITY : Martin Peña, Porto Rico.
DISTRIBUTION : Porto Rico.

3. **Eriochloa acuminata** (J. Presl) Kunth, Enum. **1** : 72. 1833.

Piptatherum acuminatum J. Presl, in Presl, Rel. Haenk. **1** : 221. 1830.
Eriochloa punctata minor Vasey, Contr. U. S. Nat. Herb. **3** : 21. 1892.

Annual. Stems up to 8 dm. tall, sometimes branched, glabrous, or pubescent above; leaf-sheaths glabrous; blades up to 2 dm. long and 1 cm. wide, glabrous; inflorescence usually of numerous racemes, 8–15 cm. long, the axis pubescent with short spreading hairs and longer ascending ones; racemes erect or nearly so, 2–4 cm. long, the rachis triangular, pubescent with short spreading hairs and longer ascending ones; spikelets often in pairs, at least at the base of the racemes, 4–6 mm. long, about 1.5 mm. wide, ovate-elliptic, the first scale wanting, the second and third scales appressed-hirsute below, acute or cuspidate, or the second rarely bearing a short awn, the fruiting scale elliptic, obtuse, about three fourths as long as the body of the first scale, obtuse, mucronate, dull or faintly shining, papillose-roughened.

TYPE LOCALITY : Mexico.
DISTRIBUTION : Texas to Arizona and northern Mexico.

4. **Eriochloa aristata** Vasey, Bull. Torrey Club **13** : 229. 1886.

Annual. Stems up to 1 m. tall, glabrous, except at the pubescent apex; leaf-sheaths glabrous; blades glabrous, up to 4 dm. long and 18 mm. wide; inflorescence 8–20 cm. long, of numerous racemes, its axis, as well as the rachis of the racemes, pubescent with long and short hairs; racemes 2–4 cm. long; spikelets often in pairs at the base of the racemes, 5.5–6.5 mm. long, excluding the awns, the first scale wanting, the second and third scales appressed-hirsute below, acuminate, the second with an awn sometimes nearly as long as the body of the scale, the third scale awn-pointed, the fruiting scale one half to two thirds as long as the body of the first scale, elliptic, papillose-roughened, not shining, puberulent at the obtuse apex, with a short hispidulous cusp 0.25 mm. long or less.

TYPE LOCALITY . Southwestern Chihuahua.
DISTRIBUTION : Arizona and Chihuahua.

5. **Eriochloa Michauxii** (R. & S.) Hitchc. Contr. U. S. Nat. Herb. **12** : 147. 1908.

Panicum molle Michx. Fl. Bor. Am. 1 : 47. 1803. Not *P. molle* Sw. 1788.
? *Monachne unilateralis* Beauv. Agrost. 49. 1812.
Panicum Michauxii R. & S. Syst. Veg. **2** : 427. 1817.
Panicum georgicum Spreng. Syst. 1 : 308. 1825.
Eriochloa mollis Kunth, Rév. Gram. 30. 1829.
Eriochloa mollis longifolia Vasey, Bull. Torrey Club **13** : 25. 1886.
Eriochloa longifolia Vasey, Contr. U. S. Nat. Herb. **3** : 21. 1892.

Perennial. Stems up to 1 m. tall or more, glabrous, except at the puberulent nodes and just below the inflorescence; leaves glabrous, except the puberulent apex of the sheath; blades up to 4.5 dm. long and 1 cm. wide; inflorescence 1–2 dm. long, the axis puberulent or almost glabrous to densely pubescent with spreading hairs; racemes ascending, 2.5–5 cm. long,

the lower ones usually on long peduncles, the rachis very nearly glabrous to hirsute; spikelets 4–5 mm. long, acute, ovate, the first scale wanting, the second and third scales appressed-hirsute, except at the apex, about equal, the fruiting scale about three fourths as long as the spikelet, puberulent at the apex, papillose-roughened, apiculate or with a very short hispidulous awn.

TYPE LOCALITY: Florida.
DISTRIBUTION: Southern Georgia and Florida.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 34*; 20: *f. 22*.

6. **Eriochloa punctata** (L.) Desv.; Hamilt. Prodr. 5. 1825.

Milium punctatum L. Syst. Nat. ed. 10. 872. 1759.
Paspalum punctatum Flügge, Gram. Monog. 127. 1810.
Piptatherum punctatum Beauv. Agrost. 168, 173. 1812.
Oedipachne punctata Link, Hort. Berol. 1: 51. 1827.
Helopus punctatus Nees, Agrost. Bras. 16. 1829.
Helopus mollis C. Muell. Bot. Zeit. 19: 314. 1861.
? *Helopus gracilis* Fourn. Mex. Pl. Gram. 13. 1881.

Annual. Stems up to 1 m. tall, pubescent at or near the nodes and below the inflorescence, or occasionally all over; leaves commonly glabrous, sometimes pubescent; blades up to 2.5 dm. long and 2 cm. wide; inflorescence 1–2 dm. long, its axis pubescent, rarely glabrous; racemes commonly numerous, erect, 1–6 cm. long, the rachis usually pubescent, rarely glabrous; spikelets 4–5 mm. long, acute, the first scale wanting, the second and third scales appressed-hirsute below, acute, sometimes awn-pointed, about equal, or the second a little longer, the fruiting scale one half to two thirds as long as the spikelet, elliptic, papillose-roughened, obtuse, bearing a hispidulous awn 0.5–1.25 mm. long.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Mississippi to Kansas and Mexico; West Indies; also in tropical South America.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 35*; Britt. & Brown, Ill. Fl. *f. 239*.

7. **Eriochloa filifolia** Hitchc. Contr. U. S. Nat. Herb. 12: 207. 1909.

Perennial. Stems up to 2 dm. tall, glabrous, slender; leaves glabrous, striate; blades convolute, those on the innovations 4–8 cm. long, those on the stem shorter; inflorescence usually of 2 racemes, the axis glabrous; racemes 1–2 cm. long, the minutely pubescent rachis very slender; spikelets about 3.5 mm. long, narrowly ovate, acuminate, the first scale wanting, the second and third scales about equal, appressed-hirsute, the fruiting scale about half as long as the spikelet, not shining, papillose-roughened, elliptic, obtuse, bearing a hispidulous awn about half its length.

TYPE LOCALITY: Jata Hills near Guanabacoa, Cuba.
DISTRIBUTION: Central and western Cuba.

8. **Eriochloa sericea** (Scheele) Munro; Vasey, Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 1*. 1890.

Paspalum racemosum Nutt. Trans. Am. Phil. Soc. II. 5: 145. 1834. Not *P. racemosum* Lam. 1791.
Paspalum sericeum Scheele, Linnaea 22: 341. 1849.
Helopus junceus C. Muell. Bot. Zeit. 19: 314. 1861.

Perennial. Stems tufted, glabrous, except at the puberulent nodes and below the inflorescence, up to 1 m. tall, simple; leaves pubescent or glabrous, flat, folded, or convolute, up to 2 dm. long and 5 mm. wide, those on the innovations longer and narrower, those on the stem shorter and broader; inflorescence 1–2 dm. long, the axis pubescent; racemes appressed, 2–4 cm. long, the rachis pubescent, the pedicels very short, bearing at the apex numerous long stiff hairs from half to as long as the spikelet; spikelets 4–4.5 mm. long, elliptic, acute, the first scale wanting, the second and third scales appressed-hirsute, equal, acute, the fruiting scale from four fifths to nearly as long as the spikelet, papillose-roughened, obtuse, usually apiculate.

TYPE LOCALITY: Near New Braunfels, Texas.
DISTRIBUTION: Oklahoma, Louisiana, and Texas.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Bot. 12[1]: *pl. 1*; Bull. U. S. Dep. Agr. Agrost. 17: *f. 338*.

9. **Eriochloa distachya** H.B.K. Nov. Gen. & Sp. 1: 95. 1815.

Stems 4–7 dm. long, pubescent at the nodes; leaf-sheaths strongly striate, glabrous or softly pubescent; blades 4–8 cm. long, 4–6 mm. wide, glabrous beneath, softly pubescent on the upper surface; racemes 1–3, 1–2 cm. long, the rachis hirsute; spikelets ovate to elliptic-lanceolate, acute, about 3 mm. long, on short pedicels which bear numerous long terminal hairs half as long as the spikelets or equaling them, the first scale wanting, the second and third scales pubescent with long hairs, the fruiting scale about four fifths as long as the spikelet, finely transversely rugose, pubescent at the apex.

TYPE LOCALITY: Orinoco River, between Santa Barbara and Esmeralda, Venezuela.
DISTRIBUTION: Guatemala to Costa Rica; also in Venezuela.
ILLUSTRATIONS: H.B.K. Nov. Gen. & Sp. *pl. 30;* Proc. Biol. Soc. Wash. **24**: 124, *f. 4.*

10. **Eriochloa Lemmoni** Vasey & Scribn. Bot. Gaz. **9**: 185. 1884.

An annual plant with the stem and especially the foliage softly pubescent. Stems 4–8 dm. tall, sometimes branched; leaf-blades up to 1.5 dm. long and 1.5 cm. wide; inflorescence 4–10 cm. long; racemes erect, 1.5–3 cm. long, the rachis densely pubescent with spreading hairs, the pedicels hispid above; spikelets 4–6 mm. long, obtuse or acutish, the first scale wanting, the second and third scales about equal in length, appressed-hirsute, the hairs increasing in length toward the glabrous apex, the fruiting scale about four fifths as long as the spikelet, obtuse, papillose-roughened, puberulent at the apex, not shining.

TYPE LOCALITY: Arizona.
DISTRIBUTION: Arizona and northern Mexico.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 36;* Beal, Grasses N. Am. **2**: *f. 25.*

11. **Eriochloa Nelsoni** Scribn. & Sm. Bull. U. S. Dep. Agr. Agrost. **4**: 12. 1897.

Leaves and portions of the stem softly pubescent. Stems up to 1 m. tall, branched; blades up to 2 dm. long and 1.5 cm. wide; inflorescence 1–1.5 dm. long, the axis densely pubescent with spreading hairs; racemes spreading or ascending, 2–3 cm. long, the rachis pubescent with short and long hairs, the pedicels with a terminal tuft of numerous stiff hairs equaling or exceeding the spikelet; spikelets 5–7 mm. long, acutish or obtuse, elliptic, the first scale wanting, the second and third scales appressed-hirsute, except at the apex, the fruiting scale smooth and shining.

TYPE LOCALITY: Hills east of Cuicatlan, Oaxaca.
DISTRIBUTION: Oaxaca, Guerrero, and Morelos.

50. **BRACHIARIA** Griseb. in Ledeb. Fl. Ross. **4**: 469. 1853.

Annual or perennial grasses with flat leaf-blades and an inflorescence composed of several to many 1-sided racemes. Spikelets articulated to the pedicel below the scales, 1- or 2-flowered, singly disposed, rarely in pairs, in 2 rows, with the back of the fruiting scale turned away from the rachis. Scales 4; outer 3 membranous, the first shorter than the spikelet, the second and third about equal in length, the latter enclosing a palet and sometimes also a staminate flower; fourth or fruiting scale indurated in fruit, the margins inrolled, papillose-rugose or smooth, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Panicum eruciforme* Sibth. & Sm.

Spikelets 4 mm. long, the veins of the outer scales united by cross-veinlets; rachis of the racemes not setiferous. 1. *B. plantaginea.*
Spikelets 2.5–3 mm. long, the veins of the outer scales free; rachis of the racemes setiferous. 2. *B. Meziana.*

1. **Brachiaria plantaginea** (Link) Hitchc. Contr. U. S. Nat. Herb. **12**: 212. 1909.

Panicum plantagineum Link, Hort. Berol. 1: 206. 1827.
Panicum Leandri Trin. Ic. *pl. 335.* 1834.
Paspalum platyphyllum Griseb. Cat. Pl. Cub. 230. 1866.
Panicum platyphyllum Munro; Vasey, Bull. U. S. Dep. Agr. Bot. 8: 25. 1889.
Brachiaria platyphylla Nash, in Small, Fl. SE. U. S. 81. 1903.

Stems at first erect, finally prostrate and rooting at the lower nodes, 4–8 dm. long; leaf-sheaths papillose-pubescent; blades up to 12 cm. long and 1.5 cm. wide, lanceolate, glabrous; racemes 2–5, distant, 3–8 cm. long; spikelets about 4 mm. long, glabrous, the first scale orbicular or nearly so, one third to two fifths as long as the spikelet, obtuse to acutish, 5–7-nerved, white, the second and third scales equal, the second 7-nerved, the third 5-nerved, the fruiting scale oval, transversely rugose, obtuse.

TYPE LOCALITY: Not indicated.
DISTRIBUTION: Louisiana to Mexico, south to Costa Rica; Cuba; also in northern South America.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 340;* Trin. Ic. *pl. 335.*

2. **Brachiaria Meziana** Hitchc. Contr. U. S. Nat. Herb. **12**: 140. 1908.

Stems tufted, often decumbent at the base, up to 7 dm. long, often rooting at the lower nodes; leaf-sheaths compressed, glabrous or pubescent; blades 3–10 cm. long, 6–10 mm. wide, glabrous or pubescent, ciliate on the margin; racemes 4–8, 2–5 cm. long, spreading or ascending, the rachis setiferous; spikelets, on setiferous pedicels, 2.5–3 mm. long, oval, glabrous, the first scale ovate to nearly orbicular, 3-nerved, acute, the second and third scales 5-nerved, the former a little shorter than the latter, the fruiting scale transversely rugose, apiculate.

TYPE LOCALITY: Cerro de Guadalupe, Federal District, Mexico, altitude 2770 m.
DISTRIBUTION: Northern and central Mexico.

51. **ANASTROPHUS** Schlecht. Bot. Zeit. **8**: 681. 1850.

Perennial tufted grasses, often with long creeping stolons which are thickly clothed with leaves having short blades, and with 1-sided racemes in pairs, digitate, or in panicles, the rachis often winged. Spikelets articulated to the pedicel below the scales, 1-flowered, elliptic to lanceolate, obtuse or acute, glabrous or pubescent, singly and alternately disposed in 2 rows, the back of the fruiting scale turned away from the rachis. Scales 3 (first scale wanting); second and third scales membranous; fourth or fruiting scale indurated, obtuse, its margins inrolled, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Paspalum platyculmum* Thouars.

Stems arising from long creeping rootstocks; plants sending out long rooting stolons.
  Spikelets 1–1.25 mm. long. 1. *A. capillaris.*
  Spikelets 2 mm. long or more.
    Racemes 2 or 3.
      Spikelets 2–3 mm. long. 2. *A. compressus.*
      Spikelets 4–6 mm. long.
        Spikelets glabrous; racemes in pairs at the summit of the stem, or sometimes with an additional one below. 3. *A. furcatus.*
        Spikelets pubescent; racemes 2, distant. 4. *A. oblusifolius.*
    Racemes numerous, racemosely arranged. 5. *A. deludens.*
Stems tufted; plants without long rooting stolons.
  Outer scales but little exceeding the fruiting scale; spikelets obtuse or acutish, 3 mm. long or less.
    Spikelets 2.5 mm. long, strongly pubescent. 6. *A. laxiflorus.*
    Spikelets 3 mm. long, sparingly pubescent at the base and on the margins only. 7. *A. poiophyllus.*
  Outer scales much exceeding the fruiting scale; spikelets acute, 4 mm. long. 8. *A. Rosei.*

1. **Anastrophus capillaris** (Lam.) Nash.

Paspalum capillare Lam. Tab. Encyc. 1: 176. 1791.
Paspalum minutum Trin. Linnaea 10: 293. 1836.
Axonopus capillaris Chase, Proc. Biol. Soc. Wash. 24: 133. 1911.

Stems up to 4 dm. tall, very slender, with one or more leafless branches arising from the upper axils; leaf-sheaths ciliate on the margin, otherwise glabrous; blades glabrous, 3–6 cm. long, 4–6 mm. wide, flat, lanceolate, acuminate; racemes in pairs at the summit of the stem and branches, or sometimes with an additional one or more below, slender, often curved, 2–3 cm. long, the rachis narrowly winged; spikelets 1–1.25 mm. long, appressed-pubescent, the outer scales about as long as the glabrous fruiting scale.

TYPE LOCALITY: South America.
DISTRIBUTION: Costa Rica; also in Peru and Brazil.
ILLUSTRATIONS: Trin. Ic. *pl. 100;* Kunth, Rév. Gram. *pl. 11.*

2. **Anastrophus compressus** (Sw.) Schlecht.; (Doell, in Mart. Fl. Bras. **2**[2]: 102, as synonym. 1877) Nash, in Small, Fl. SE. U. S. 79. 1903.

Milium compressum Sw. Prodr. 24. 1788.
Paspalum tristachyon Lam. Tab. Encyc. 1: 176. 1791.
Paspalum platycaulon Poir. in Lam. Encyc. **5**: 34. 1804.
Axonopus compressus Beauv. Agrost. 154, 167. 1812.
Paspalum compressum Rasp. Ann. Sci. Nat. 5: 301. 1825.
Paspalum laticulmum Spreng. Syst. 1: 245. 1825.
Paspalum fastigiatum Nees, Agrost. Bras. 33. 1829.
Paspalum guadaloupense Steud. Syn. Gram. 18. 1854.
Paspalum filostachyum Rich.; Steud. Syn. Gram. 20. 1854.
Paspalum depressum Steud. Syn. Gram. 20. 1854.
Anastrophus platycaulis Nash, in Small, Fl. SE. U. S. 79. 1903.

A tufted perennial with long creeping leafy stolons, flat and obtuse leaf-blades, and pubescent spikelets. Stems up to 1 m. tall, with one or more leafless branches above; leaf-sheaths much compressed, keeled, glabrous; blades glabrous or ciliate on the margins, the larger 3 dm. long or less, 3–15 mm. wide, linear to linear-lanceolate, those on the creeping stolons numerous, smaller and crowded; racemes in a pair at the summit of the stem, or sometimes with an additional one a short distance below, 3–10 cm. long; spikelets 2–2.25 mm. long, elliptic, oblong, or ovate, acute or obtuse, the outer 2 scales appressed-pubescent near the margin, 5-nerved, or sometimes 4-nerved by the suppression of the midnerve, the fruiting scale pubescent at the apex with a tuft of hairs.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Virginia to Florida and Texas; West Indies; continental tropical America.
ILLUSTRATIONS: Trin. Ic. *pl. 118*; Proc. Biol. Soc. Wash. **24**: 129, *f. 6*; Britt. & Brown, Ill. Fl. *f. 236*; Vasey, Agr. Grasses U. S. ed. 2. *pl. 6*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 24*; Bull. Tenn. Exp. Sta. 7: *f. 25*.

3. **Anastrophus furcatus** (Flügge) Nash.

Paspalum furcatum Flügge, Gram. Monog. 114. 1810.
Milium distichum Muhl. Cat. 10. 1813; Descr. Gram. 78. 1817.
Milium paspalodes Ell. Bot. S. C. & Ga. **1**: 104, in part. 1816.
Paspalum Digitaria Chapm. Fl. S. U. S. 570. 1860. Not *P. Digitaria* Poir. 1816.
Paspalum Digitaria C. Muell. Bot. Zeit. **19**: 324. 1861. Not *P. Digitaria* Poir. 1816.
Paspalum Michauxianum villosum Vasey, Bull. Torrey Club **13**: 163. 1886.
Paspalum Elliottii S. Wats. in A. Gray, Man. ed. 6. 629. 1890.
Paspalum furcatum villosum Vasey, Contr. U. S. Nat. Herb. **3**: 16. 1892.
Paspalum paspaloides Scribn. Mem. Torrey Club **5**: 29, in part. 1894.
Paspalum paspaloides villosum Scribn. & Ball, Bull. U. S. Dep. Agr. Agrost. **24**: 42. 1901.
Anastrophus paspaloides Nash, in Britton, Man. 75. 1901.

A tufted perennial with long creeping leafy stolons, broad flat leaf-blades, and glabrous spikelets. Stems 3–10 dm. tall, with one or more leafless branches above; leaf-sheaths glabrous or hirsute, much compressed, keeled; blades glabrous or hirsute, 3 dm. long or less, 6–15 mm. wide, linear; racemes in pairs at the summit of the stem, rarely with an additional one a short distance below, 3–15 cm. long; spikelets 4–6 mm. long, glabrous, acute, the outer scales 5-nerved, or the second often 4-nerved by the suppression of the midnerve, the fruiting scale one half to two thirds as long as the others.

TYPE LOCALITY: [South] Carolina.
DISTRIBUTION: Virginia to Florida, and west to Texas.
ILLUSTRATIONS: Britt. & Brown, Ill. Fl. *f. 237*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 23*; Ell. Bot. S. C. & Ga. *pl. 6, f. 2*.

4. **Anastrophus obtusifolius** (Raddi) Nash.

? *Helopus barbatus* Trin. Neue Entdeck. **2**: 49. 1821.
Paspalum obtusifolium Raddi, Agrost. Bras. 23. 1823.
? *Paspalum barbatum* Schultes, in R. & S. Syst. Veg. Mant. **3**: 558. 1827.

A perennial with long leafy creeping stolons. Stems 2–3 dm. tall, compressed; leaf-sheaths loose, broad, much compressed, smooth and glabrous; blades 3–10 cm. long, 1–1.5 cm. wide, ciliate on the margins, otherwise glabrous, linear-oblong, somewhat cordate at the base, rounded at the apex; racemes 2, distant, 3–5 cm. long; spikelets broadly lanceolate, 4.5–5 mm. long, acuminate, the sparingly hirsute outer scales nearly twice as long as the fruiting scale, which is elliptic and obtuse.

TYPE LOCALITY: Near Rio de Janeiro, Brazil.
DISTRIBUTION: Southern Mexico (according to Fournier); also in tropical South America.
ILLUSTRATION: Trin. Ic. *pl. 115*.

5. **Anastrophus deludens** (Chase) Nash.

Axonopus deludens Chase, Proc. Biol. Soc. Wash. 24: 134. 1911.

A smooth and glabrous tufted perennial, with a creeping rootstock, long flat leaf-blades, and a long-exserted panicle of slender racemes. Stems up to 1.5 m. tall; leaf-sheaths compressed; blades up to 4.5 dm. long and 1.5 cm. wide, long-acuminate; racemes 6–15, slender, the rachis triangular and barely winged, scabrous on the margins, 1.5–2 dm. long, sometimes naked at the base; spikelets rather scattered, sometimes barely overlapping, about 3 mm. long, the scales about equal in length, the outer two 5-nerved, or 4-nerved by the suppression of the midnerve, the fruiting scale oblong-elliptic, obtuse, rough with papillae, glabrous, or with a few hairs at the apex.

TYPE LOCALITY: On the slopes of barrancas near Guadalajara, Jalisco.
DISTRIBUTION: Known only from the type locality.

6. **Anastrophus laxiflorus** (Trin.) Nash.

Paspalum laxiflorum Trin. Mém. Acad. St. Petersb. VI. 3²: 148. 1834.
Axonopus laxiflorus Chase, Proc. Biol. Soc. Wash. 24: 133. 1911.

A tufted perennial. Stems erect, up to 1 m. tall, sometimes with one or more leafless branches from the upper axils; leaf-sheaths ciliate on the margin, glabrous or pubescent; blades up to 2 dm. long, 3–4 mm. wide, commonly folded, glabrous, or the upper surface somewhat hairy, sometimes ciliate toward the base; racemes 3–7, 3–12 cm. long, sometimes only 2 or 3 and digitate, the others when present scattered below; spikelets 2.5 mm. long, the scales about equal in length, the outer ones pubescent with long hairs, usually 4- or 6-nerved by the suppression of the midnerve, the fruiting scale elliptic-oblong, obtuse, with a tuft of hairs at the apex.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Oaxaca to Guatemala; also in Brazil.

7. **Anastrophus poiophyllus** (Chase) Nash.

Axonopus poiophyllus Chase, Proc. Biol. Soc. Wash. 24: 133. 1911.

A tufted perennial. Stems erect, slender, compressed, up to 1 m. tall, the nodes appressed-pubescent; lower leaf-sheaths villous, the upper ones glabrous or pubescent along the margin; blades up to 3.5 dm. long, 3–5 mm. wide, firm, erect, linear, folded at the base and boat-shaped at the apex, papillose-villous toward the base; racemes about 3, slender, erect, up to 12 cm. long; spikelets rather distant, about 3 mm. long, flushed with purple, oblong-elliptic, the outer scales a little longer than the fruiting scale, sparsely pubescent at the base and on the margins, 4-nerved by the suppression of the midnerve, the fruiting scale with a tuft of hairs at the apex.

TYPE LOCALITY: Secanquin, Alta Verapaz, Guatemala.
DISTRIBUTION: Known only from the type locality.

8. **Anastrophus Rosei** (Scribn. & Merr.) Nash.

Paspalum Rosei Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. 24: 9. 1901.
Axonopus Rosei Chase, Proc. Biol. Soc. Wash. 24: 132. 1911.

A tufted perennial. Stems up to 6 dm. long, slender; leaf-sheaths rough; blades linear, acute, flat or folded, 2–3 mm. wide, the basal up to 3 dm. long, those on the stem shorter; racemes in pairs, or sometimes with an additional one a short distance below, 5–7 cm. long; spikelets 4 mm. long, acute, lanceolate, the outer scales equal, lanceolate, acuminate, 5-nerved, sparingly hairy, the fruiting scale oblong, obtuse, about 3 mm. long, with a tuft of short hairs at the apex.

TYPE LOCALITY: Foothills of the Sierra Madre mountains, between Pedro Paulo and San Blascito, Tepic.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 24: *f. 2*.

52. **AXONOPUS** Beauv. Agrost. 12. 1812.

Cabrera Lag. Gen. Sp. Pl. 5. 1816.
Lappagopsis Steud. Syn. Gram. 112. 1854.

Tufted perennial grasses, with an inflorescence of stiff racemes approximate at the summit of the stem, the racemes 1-sided, the rachis flat, or with excavations for the reception of the spikelets, and with numerous golden hairs. Spikelets articulated to the pedicel below the scales, 1-flowered, solitary, alternate, in 2 rows on one side of the rachis, the back of the fruiting scale turned away from the rachis. Scales 3 (first scale wanting); second and third scales about equal in length, glabrous or pubescent; fourth or fruiting scale indurated, oblong-elliptic, its margins a little inrolled, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct. Stigmas plumose.

Type species, *Axonopus aureus* Beauv.

Spikelets not immersed, a tuft of numerous stiff golden hairs at the base. 1. *A. aureus.*
Spikelets immersed in excavations in the rachis, without a basal tuft of hairs. 2. *A. chrysoblepharis.*

1. **Axonopus aureus** Beauv. Agrost. 12. 1812.

Paspalum aureum H.B.K. Nov. Gen. & Sp. 1 : 93. 1815.
Digitaria aurea Spreng. Syst. 1 : 272. 1825.
Paspalum exasperatum Nees, Agrost. Bras. 81. 1829.
Panicum aureum Trin. Mém. Acad. St. Petersb. VI. 3^2 : 196. 1834.

Stems up to 1.5 m. tall, glabrous; leaf-sheaths glabrous or pubescent; blades up to 2 dm. long, 7–9 mm. wide, glabrous or pubescent; racemes 8–15, corymbose-fasciculate, 5–8 cm. long, the rachis triangular, the angles tuberculate-hispid with stiff golden spreading hairs, with a tuft of widely spreading similar hairs below each spikelet; spikelets 1.25–1.5 mm. long, obovate to elliptic, obtuse, glabrous.

TYPE LOCALITY: Not indicated.
DISTRIBUTION: Costa Rica and tropical South Amcrica.
ILLUSTRATION: Trin. Ic. *pl. 97.*

2. **Axonopus chrysoblepharis** (Lag.) Chase, Proc. Biol. Soc. Wash. **24** : 134. 1911.

Cabrera chrysoblepharis Lag. Gen. Sp. Pl. 5. 1816.
Paspalum aureum H.B.K. Nov. Gen. & Sp. 1 : 93, in part. 1815.
Paspalum immersum Nees, Agrost. Bras. 82. 1829.
Paspalum appendiculatum J. Presl, in Presl, Rel. Haenk. 1 : 211. 1830.
Panicum immersum Trin. Mém. Acad. St. Petersb. VI. 3^2 : 197. 1834.
Panicum chrysoblephare Steud. Syn. Gram. 38. 1854.
Paspalum chrysoblephare Doell, in Mart. Fl. Bras. 2^2 : 119. 1877.

Stems up to 1 m. tall, glabrous; leaf-sheaths densely papillose-hispid; blades up to 2.5 dm. long, 6–8 mm. wide, glabrous or pubescent, usually ciliate toward the base; racemes 3–9, corymbose-fasciculate, 3–8 cm. long, the rachis flat, with excavations for the reception of the spikelets, the margins and median elevation tuberculate-hispid with yellow hairs; spikelets 1.25–1.5 mm. long, oblong-elliptic, obtuse, glabrous.

TYPE LOCALITY: Panama.
DISTRIBUTION: Costa Rica and Panama; also in tropical South America.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 27.*

53. **REIMAROCHLOA** Hitchc. Contr. U. S. Nat. Herb. **12** : 198. 1909.

Reimaria Flügge, Gram. Monog. 213, in part. 1810.

Perennial grasses, usually diffusely branched, with the inflorescence composed of 2 or more secund racemes. Spikelets articulated to the pedicel below the scales, 1-flowered, acuminate, on short pedicels, alternately disposed in 2 rows on a narrow or somewhat dilated rachis, the back of the flowering scale turned toward the rachis. Scales 2 (first and second scales wanting); third scale membranous, 3–9-nerved, acute or acuminate; fourth or fruiting scale long-acuminate, thin, becoming harder in fruit, the margins inrolled below and enclosing the palet, which is free at the apex and of similar texture, and a perfect flower. Stamens 2. Styles distinct to the base. Stigmas long-plumose.

Type species, *Reimaria acuta* Flügge.

Racemes 5–12, slender; spikelets 2.5–3 mm. long, hirsute on the lateral nerves of the first scale. 1. *R. brasiliensis.*
Racemes 2 or 3, stout; spikelets 5 mm. long, glabrous. 2. *R. oligostachya.*

1. **Reimarochloa brasiliensis** (Spreng.) Hitchc. Contr. U. S. Nat. Herb. **12**: 198. 1909.

Agrostis brasiliensis Spreng. Novi Hort. Hal. 45. 1819.
Reimaria brasiliensis Schlecht. Bot. Zeit. **10**: 17. 1852.
Panicum oxyanthum Steud. Syn. Gram. 41. 1854.

Stems tufted, finally rooting at the lower nodes and usually sending up erect branches up to 1.5 dm. tall; leaf-sheaths ciliate on the margins, otherwise glabrous, or sparingly pubescent; blades glabrous or pubescent, 2–4 cm. long, 2–3 mm. wide; panicle of 5–12 slender racemes, 1.5–3 cm. long; spikelets lanceolate, 2.5–3 mm. long, rarely smaller or larger, acuminate, the outer scale 3-nerved, the lateral nerves hirsute, the fruiting scale thin, delicate, hyaline, usually longer than the outer scale, attenuate at the apex.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Cuba; Haïti; also in tropical South America.
ILLUSTRATIONS: Mart. Fl. Bras. **2**[2]: *pl. 12, f. 1;* Trin. Ic. *pl. 276* (as *Reimaria conferta*).

2. **Reimarochloa oligostachya** (Munro) Hitchc. Contr. U. S. Nat. Herb. **12**: 199. 1909.

Reimaria oligostachya Munro; Benth. Jour. Linn. Soc. **19**: 34. 1881.

Smooth and glabrous. Stems compressed, 4–8 dm. long; leaf-sheaths compressed; blades erect or ascending, 5–15 dm. long, 2–4 mm. wide; racemes in pairs at the summit of stem, or sometimes with an additional one a short distance below, 3–7 cm. long; spikelets broadly lanceolate, about 5 mm. long, about twice as long as the rachis-internodes, the outer scale 9-nerved, the 4 nerves on each side close together and rather distant from the midnerve, the fruiting scale equaling or a little shorter than the outer scale, acute, ovate-lanceolate.

TYPE LOCALITY: Florida.
DISTRIBUTION: Florida and Cuba.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 22;* **20**: *f. 18;* Rep. Comm. Agr. 1888: Bot. *pl. 1, f. 1;* Beal, Grasses N. Am. **2**: *f. 21.*

54. **PASPALUM** L. Syst. Nat. ed. 10. 855. 1759.

Sabsab Adans. Fam. Pl. **2**: 31. 1763.
? *Cleachne* Roland; Rottb. Acta Lit. Univ. Hafn. **1**: 285. 1778.
Ceresia Pers. Syn. Pl. **1**: 85. 1805.
Reimaria Flügge, Gram. Monog. 213. 1810.
Paspalanthium Desv. Opusc. 59. 1831.
Anachyris Nees, Jour. Bot. & Kew Misc. **2**: 103. 1850.
Maizilla Schlecht. Bot. Zeit. **8**: 601. 1850.
Cymatochloa Schlecht. Bot. Zeit. **12**: 821. 1854.
Syllepis Fourn. Mex. Pl. Gram. 52, in part. 1881.

Annual or perennial grasses, varying much in habit, the stems tufted or single, erect to prostrate, and often arising from creeping rootstocks. Racemes 1-sided, 1–many, scattered, opposite, or verticillate, or in pairs at the summit of the stem, the rachis usually winged, the wings green or colored, flat, or sometimes inrolled on the spikelets. Spikelets articulated below the empty scales, 1-flowered, alternately disposed in 2 rows, single or in pairs, with the back of the fruiting scale turned toward the rachis, orbicular to elliptic or ovate, usually obtuse, rarely acute or acuminate, plano-convex, or sometimes flat on both surfaces. Scales rarely 2 (the first and second wanting), usually 3 (the first wanting), or sometimes 4, with the first usually small or reduced to a mere rudiment, rarely large, the second and third scales and rarely the first 3–several-nerved, or sometimes 2-nerved by the suppression of the midnerve; fruiting scale with its opening turned away from the rachis, chartaceous in flower, usually becoming indurated in fruit, commonly obtuse or rounded at the apex, rarely acute, enclosing a palet of similar texture and a perfect flower. Stamens 3. Styles distinct, often elongate. Stigmas plumose.

Type species, *Panicum dissectum* L.

A. Spikelets glabrous, or if pubescent the hairs shorter or not much longer than the spikelet, not auriculate at the base, the outer scales firm and usually with a midnerve.
Spikelets with none of the scales winged.
Fruiting scale with several longitudinal ridges. I. ELONGATA.
Fruiting scale with no ridges.
Racemes 1–many, never conjugate at the summit of the stem.
Stems erect and tufted, or prostrate and rooting at the lower nodes; stolons, when present, appressed, hence no long rootstocks.
Rachis-wings broad, membranous, inrolled on the spikelets.
Wings colored, or if green reticulate; spikelets long-hairy. II. STELLATA.
Wings green; spikelets not long-hairy. III. DISSECTA.
Rachis-wings narrow, not membranous nor inrolled on the spikelets, sometimes wanting.
Spikelets of 4 scales. V. PEDUNCULATA.
Spikelets of 2 scales. VI. PULCHELLA.
Spikelets of 3 scales.
Stems with leafless flower-bearing branches from the upper axils.
Fruiting scale smooth and shining, or sometimes minutely roughened.
Spikelets broadly oval to obovate; racemes usually 1 or 2, rarely more. IV. SETACEA.
Spikelets elliptic, about one half as broad as long, or if broader then glandular-pubescent and racemes several.
Spikelets glabrous or appressed-pubescent. XIV. CAESPITOSA.
Spikelets glandular-pubescent. XV. LENTIGINOSA.
Fruiting scale dull, manifestly roughened with papillae striately arranged. V. PEDUNCULATA.
Stems without such branches.
Outer scales of the spikelet normally with a midnerve; stems erect, or prostrate and rooting at the lower nodes.
Fruiting scale broadly obtuse or rounded at the apex, sometimes apiculate.
Rachis of the racemes without wings. XI. PORTORICENSIA.
Rachis with wings.
Spikelets glabrous, or with short pubescence, obtuse or merely acutish.
Racemes few, less than 10.
Fruiting scale white, yellowish, or greenish.
Spikelets normally singly disposed.
Spikelets elliptic, oblong, or ovate, not more than one half as broad as long, or if broader then less than 2 mm. long.
Outer scales of spikelet, at least the first, 3–5 nerved. VII FILIFORMIA.
Outer scales 2-nerved. VIII. PARVIFLORA.
Spikelets broadly oval or orbicular, more than one half as broad as long, 2 mm. long or more. IX. LAEVIA.
Spikelets normally in pairs.
Cauline leaf-blades deeply cordate-clasping above. XIII. MICROSTACHYA.
Cauline leaf-blades not cordate-clasping.
Fruiting scale manifestly papillose or warty.
Spikelets 1.5 mm. long or less.
Raceme single; spikelets more than 1 mm. long.
Racemes 2–4; spikelets less than 1 mm. XXVI. NOTATA.

long; outer scales with a black spot at the apex. XII. MACULATA.
Spikelets 1.8 mm. long or more. V. PEDUNCULATA.
Fruiting scale smooth or only minutely roughened.
Spikelets elliptic, oval, or obovate.
Spikelets glabrous, or if pubescent the hairs not glandular-tipped.
Pubescence spreading, the spikelets if glabrous 2.5–3 mm. long. X. TENELLA.
Pubescence appressed, the spikelets if glabrous less than 2.5 mm. long. XIV. CAESPITOSA.
Spikelets pubescent with glandular-tipped hairs. XV. LENTIGINOSA.
Spikelets orbicular or nearly so. XVII. PANICULATA.
Fruiting scale brown. XVI. SCROBICULATA.
Racemes numerous, crowded in a dense panicle.
Spikelets less than 2 mm. long, plano-convex. XVII. PANICULATA.
Spikelets more than 2 mm. long, or if smaller flat on both sides. XVIII. VIRGATA.
Spikelets long-hairy, very acute. XIX. DILATATA.
Fruiting scale acute or acutish, narrowed from the middle to the apex.
Spikelets glabrous. XXVIII. LINEARIA.
Spikelets pubescent with long hairs.
Hairs only on the margins; stems finally branched. XXIX. FASCICULATA.
Hairs on the surface; stems simple. XXX. ERIANTHA.
Outer scales of the spikelet with the midnerve suppressed; stems extensively creeping and trailing. XXIV. ORBICULATA.
Stems single, with long branching or short scaly rootstocks, or if apparently tufted the stolons spreading and forming pronounced rootstocks.
Spikelets glabrous.
Rachis winged.
Racemes 3–several; internodes of the rootstock short. XX. FLORIDANA.
Racemes single, or sometimes 2; internodes of the rootstock long. XXI. MONOSTACHYA.
Rachis wingless. XXII. BIFIDA.
Spikelets long-hairy. XXXI. HUMBOLDTIANA.
Racemes conjugate at the summit of the stem, occasionally in 3's or with an additional one a short distance below.
Spikelets flat on both surfaces, long-ciliate, the outer scales 2-nerved by the suppression of the midnerve, the fruiting scale thin and papery. XXV. CONJUGATA.
Spikelets manifestly plano-convex, not ciliate, the outer scales normally with a midnerve, the fruiting scale firm and thick.
Fruiting scale manifestly papillose; stems tufted.
Spikelets closely and regularly imbricate, orbicular, oval, or obovate. XXVI. NOTATA.
Spikelets loosely arranged, narrowly elliptic to elliptic-oblong. XXVIII. LINEARIA.

Fruiting scale smooth and shining; stems from long branching rootstocks. XXVII. DISTICHA.
Spikelets with the first scale broadly winged.
Wing lacerate; spikelets glabrous. XXIII. FIMBRIATA.
Wing entire; second scale papillose-hispid. XXXII. PECTINATA.
B. Spikelets with long hairs 2–3 times their length; first scale with 2 lateral nerves only, these extending at the base into decided projections, the midnerve wanting and the internerve hyaline and very delicate. XXXIII. SACCHAROIDEA.

I. ELONGATA.

A single species in our range. 1. *P. elongatum.*

II. STELLATA.

Rachis-wings brown, not reticulate.
Ciliate hairs on the spikelets of one kind. 2. *P. cymbiforme.*
Ciliate hairs on the spikelets of two kinds, one much stouter than the other.
Spikelets 2–2.5 mm. long, only the first scale ciliate, or the second short-ciliate toward the apex. 3. *P. heterotrichon.*
Spikelets 2.5–3 mm. long, the 2 outer scales ciliate. 4. *P. stellatum.*
Rachis-wings yellowish-green, reticulate. 5. *P. trachycoleon.*

III. DISSECTA.

Spikelets of 2 scales.
Spikelets 2–2.5 mm. long; leaves smooth. 6. *P. candidum.*
Spikelets 1.5–1.75 mm. long; leaves very hispidulous. 7. *P. scabrum.*
Spikelets of 3 scales.
Rachis-internodes longer than the spikelets which are apparently in 1 row. 8. *P. longicuspe.*
Rachis-internodes shorter than the spikelets which are apparently in 2 rows.
Inflorescence of 2–4 racemes.
Spikelets obtuse, about 2 mm. long, oval. 9. *P. dissectum.*
Spikelets acute, 3–5 mm. long, elliptic. 10. *P. acuminatum.*
Inflorescence of numerous, 7 or more, racemes.
Spikelets glabrous, about 2 mm. long, obtuse; racemes broad. 11. *P. prostratum.*
Spikelets pubescent, 1.5–1.75 mm. long, acute or acutish; racemes slender. 12. *P. mucronatum.*

IV. SETACEA.

Leaf-blades glabrous, or rarely with a few scattered hairs on the margin.
Blades narrowly linear, 3–5 mm. wide. 13. *P. rigidifolium.*
Blades linear to lanceolate, 7 mm. wide or more.
Spikelets glabrous. 14. *P. epile.*
Spikelets pubescent. 15. *P. Eggertii.*
Leaf-blades pubescent.
Blades glabrous on the surface, at least the lower surface, or rarely with a few scattered long hairs, the margins conspicuously ciliate.
Spikelets about 1.5 mm. long; leaves more numerous at the base of the stem. 16. *P. longepedunculatum.*
Spikelets 1.8 mm. long or more; leaves scattered.
Blades firm, appressed-pubescent on the upper surface with short hairs. 17. *P. stramineum.*
Blades thin, membranous, glabrous on the upper surface.
Spikelets glabrous. 18. *P. ciliatifolium.*
Spikelets pubescent. 19. *P. Chapmani.*
Blades densely pubescent on the surface, the margins sometimes ciliate.
Spikelets less than 2 mm. long.
Stems slender; leaf-blades narrow and scattered. 22. *P. setaceum.*
Stems stout; leaf-blades broad, cordate at the base; pubescence very long and copious. 25. *P. debile.*
Spikelets 2 mm. long or more.
Pubescence on foliage of copious, soft, short, appressed hairs.
Stems prostrate, the lower blades 1 dm. long or less. 20. *P. psammophilum.*
Stems erect, the lower blades 1.5 dm. long or more. 21. *P. Bushii.*
Pubescence on foliage of long, stiff, spreading hairs.
Stems long-hirsute below the racemes; basal sheaths usually glabrous or nearly so. 24. *P. pubescens.*
Stems glabrous throughout; basal sheaths usually hirsute.
Racemes on the main stem 1 or sometimes 2; spikelets glabrous; blades not thick. 23. *P. Muhlenbergii.*
Racemes on the main stem 2 or 3; spikelets usually pubescent; blades thick. 26. *P. supinum.*

V. PEDUNCULATA.

Second scale not more than one half as long as the spikelet. 27. *P. pedunculatum.*
Second scale as long as the spikelet or nearly so.

Spikelets glabrous.
Spikelets nearly orbicular, all with 4 scales. 28. *P. guatemalense.*
Spikelets elliptic or obovate, of 3 scales, or the lower of each pair often with an additional scale at the base.
Spikelets 1.5–2 mm. long, of 3 scales. 29. *P. Lloydii.*
Spikelets more than 2 mm. long, the lower of each pair often with an additional scale at the base. 30. *P. culiacanum.*
Spikelets pubescent.
Spikelets of 3 scales, or the lower of each pair sometimes with an additional basal scale. 31. *P. macrophyllum.*
Spikelets of 4 scales, or rarely the second spikelet of each pair of 3 scales only.
Spikelets less than 2.5 mm. long, the first scale of the lower spikelet usually short and rounded. 32. *P. Langei.*
Spikelets 2.5 mm. long or more, the first scale of the lower spikelet usually one half its length or more and long-acuminate.
Spikelets 2.5–2.8 mm. long. 33. *P. ciliiferum.*
Spikelets 3–3.2 mm. long. 34. *P. variabile.*

VI. PULCHELLA.

One species. 35. *P. pulchellum.*

VII. FILIFORMIA.

Fruiting scale much shorter than the empty scales, about two thirds as long. 36. *P. alterniflorum.*
Fruiting scale as long as the empty scales or nearly so.
Spikelets transversely rugose. 37. *P. filiforme.*
Spikelets not rugose.
Leaf-blades slender, less than 1 mm. wide, involute.
Spikelets less than 2 mm. long, glabrous.
Spikelets elliptic, more than one half as broad as long; leaf-blades straight, setaceous. 38. *P. leptocaulon.*
Spikelets elliptic-oblong, less than one half as broad as long; leaf-blades capillary, curved. 39. *P. capillifolium.*
Spikelets more than 2 mm. long, pubescent. 40. *P. rottboellioides.*
Leaf-blades broad, flat, more than 1 mm. wide.
Spikelets glabrous.
Spikelets elliptic, about one half as broad as long; racemes 2 cm. long or more. 41. *P. Leoninum.*
Spikelets broadly oval, two thirds as broad as long or more; racemes less than 1.5 cm. long. 42. *P. breve.*
Spikelets pubescent. 43. *P. rupestre.*

VIII. PARVIFLORA.

One species. 44. *P. parviflorum.*

IX. LAEVIA.

Spikelets manifestly plano-convex.
Spikelets transversely rugose. 45. *P. nanum.*
Spikelets not rugose.
Spikelets one half as thick as broad or more, the empty scales firm.
Leaf-sheaths glabrous, or merely ciliate. 46. *P. laeve.*
Leaf-sheaths hirsute with long weak hairs.
Blades glabrous on the lower surface, short. 47. *P. longipilum.*
Blades hirsute on both surfaces. 48. *P. plenipilum.*
Spikelets one fourth to one third as thick as broad, the empty scales very thin and wrinkled. 49. *P. circulare.*
Spikelets flat on both sides, or slightly convex on one side.
Spikelets orbicular to broadly obovate.
Leaves, excepting sometimes the exterior basal sheaths, glabrous.
Spikelets 2–2.5 mm. long. 50. *P. praecox.*
Spikelets 2.75–3.5 mm. long. 51. *P. glaberrimum.*
Leaves, sheaths and blades or either, hirsute.
Sheaths densely hirsute. 52. *P. Curtisianum.*
Sheaths glabrous, or merely the basal ones hirsute. 53. *P. tardum.*
Spikelets elliptic, acutish.
Spikelets glabrous. 54. *P. lividum.*
Spikelets pubescent. 55. *P. Buckleyanum.*

X. TENELLA.

Spikelets 2 mm. long; leaf-blades hirsute. 56. *P. tenellum.*
Spikelets 2.5–3 mm. long; leaf-blades glabrous, at least on the surfaces.
Spikelets pubescent. 57. *P. pubiflorum.*
Spikelets glabrous. 58. *P. geminum.*

XI. PORTORICENSIA.

One species. 59. *P. portoricense.*

XII. MACULATA.

One species. 60. *P. maculatum.*

XIII. MICROSTACHYA.

One species. 61. *P. microstachyum.*

XIV. CAESPITOSA.

Blades less than 1.5 cm. wide; spikelets 2.2 mm. long or less.
  Spikelets pubescent.
    Racemes commonly less than 5 cm. long; spikelets 1.3–1.8 mm. long. 62. *P. caespitosum.*
    Racemes commonly more than 5 cm. long; spikelets 1.8–2 mm. long. 63. *P. Helleri.*
  Spikelets glabrous. 64. *P. glabrum.*
Blades up to 2.5 cm. wide; spikelets 2.25–2.5 mm. long. 65. *P. mandiocanum.*

XV. LENTIGINOSA.

Pubescence on spikelets rather scant; blades commonly less than 1 cm. wide; West Indies and Florida. 66. *P. Simpsoni.*
Pubescence on spikelets dense; blades commonly more than 1 cm. wide; Mexico. 67. *P. lentiginosum.*

XVI. SCROBICULATA.

Fruiting scale one half as broad as long or less, elliptic. 68. *P. elatum.*
Fruiting scale more than one half as broad as long, oval to obovate.
  Spikelets singly arranged. 69. *P. scrobiculatum.*
  Spikelets arranged in pairs.
    Rachis not as wide as the spikelets.
      Low plant, rarely over 3 dm. tall; spikelets orbicular or nearly so. 70. *P. convexum.*
      Tall plant; spikelets oval, sometimes obovate. 71. *P. plicatulum.*
    Rachis wider than the spikelets. 72. *P. Boscianum.*

XVII. PANICULATA.

Spikelets pubescent. 73. *P. paniculatum.*
Spikelets glabrous. 74. *P. squamulatum.*

XVIII. VIRGATA.

Fruiting scale white to yellowish.
  Spikelets glabrous.
    Spikelets less than 2 mm. long. 75. *P. densum.*
    Spikelets 2 mm. long or more.
      Spikelets elliptic to obovate, 2.5–3 mm. long. 76. *P. Schreberianum.*
      Spikelets nearly orbicular to broadly obovate, 1.8–2.4 mm. long. 77. *P. Underwoodii.*
  Spikelets pubescent. 78. *P. conspersum.*
Fruiting scale brown at maturity. 79. *P. virgatum.*

XIX. DILATATA.

Spikelets about 2.5 mm. long; racemes numerous, usually more than 10. 80. *P. Larrañagai.*
Spikelets 3–3.5 mm. long; racemes few, usually less than 8. 81. *P. dilatatum.*

XX. FLORIDANA.

Racemes long and erect, or short and ascending.
  Blades 1–1.5 dm. long; racemes short and ascending. 82. *P. difforme.*
  Blades 2 dm. long or more; racemes long and erect. 83. *P. floridanum.*
Racemes long, finally widely spreading.
  Sheaths glabrous; blades often ciliate with short hairs. 84. *P. giganteum.*
  Sheaths densely hirsute; blades ciliate with long hairs. 85. *P. longicilium.*

XXI. MONOSTACHYA.

Spikelets of 3 scales, the fruiting scale smooth. 86. *P. monostachyum.*
Spikelets, at least the lower one of each pair, of 4 scales, the fruiting scale roughened with manifest papillae.
  Outer convex scale 5-nerved, the internerves about equal in width. 87. *P. pilosum.*
  Outer convex scale 3-nerved, or if 5-nerved the lateral nerves approximate and the internerves differing much in width. 88. *P. unispicatum.*

XXII. BIFIDA.

One species. 89. *P. bifidum.*

XXIII. FIMBRIATA.

One species. 90. *P. fimbriatum.*

XXIV. ORBICULATA.

One species. 91. *P. orbiculatum.*

XXV. CONJUGATA.

One species. 92. *P. conjugatum.*

XXVI. NOTATA.

Spikelets 1.5 mm. long or less.	
Spikelets circular, glabrous, often papillose.	93. *P. multicaule.*
Spikelets obovate, pubescent.	94. *P. clavuliferum.*
Spikelets 2 mm. long or more.	
Spikelets 2.7–4 mm. long.	95. *P. notatum.*
Spikelets 2–2.5 mm. long.	96. *P. minus.*

XXVII. DISTICHA.

Spikelets ovate, 2.5–3 mm. long, the convex side appressed-pubescent.	97. *P. distichum.*
Spikelets ovate-lanceolate, 3–4 mm. long, glabrous.	98. *P. vaginatum.*

XXVIII. LINEARIA.

One species.	99. *P. lineare.*

XXIX. FASCICULATA.

One species.	100. *P. fasciculatum.*

XXX. ERIANTHA.

One species.	101. *P. erianthum.*

XXXI. HUMBOLDTIANA.

One species.	102. *P. Humboldtianum.*

XXXII. PECTINATA.

One species.	103. *P. pectinatum.*

XXXIII. SACCHAROIDEA.

One species.	104. *P. saccharoides.*

1. **Paspalum elongatum** Griseb. Abh. Ges. Wiss. Gött. **19**: 260. 1874.

Stems up to 1 m. tall or more; leaves pubescent or glabrous; blades 1–2 dm. long, 6–15 mm. wide; panicle 1–2 dm. long, of 10–15 spreading or ascending racemes, the rachis with scattered hairs; spikelets in pairs, 2–2.5 mm. long, elliptic, obtuse, the first and second scales wanting, the third scale herbaceous, glabrous, 3-nerved, the fruiting scale prominently 5-ridged, papillose-striate.

TYPE LOCALITY: In valleys near Ascochinga, Cordoba, Argentina.
DISTRIBUTION: Yucatan; also in South America.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. **3**: 27, *f.*

2. **Paspalum cymbiforme** Fourn. Mex. Pl. Gram. 5. 1881.

Stems up to 8 dm. tall, branched, glabrous, the nodes usually pubescent; leaf-sheaths glabrous, crowded and overlapping below; blades flat or the upper ones involute, 8–15 cm. long, 5–7 mm. wide, glabrous, long-acuminate; inflorescence 8–10 cm. long, of 2 or 3 racemes 4–6 cm. long, the rachis with brown wings about 0.5 mm. wide; spikelets 2.5–3 mm. long, elliptic, acute, the first scale wanting, the second and third scales 3-nerved, the second ciliate on the lateral nerves with very long stiff hairs and pubescent on the internerve near the base.

TYPE LOCALITY: Mirador, Vera Cruz.
DISTRIBUTION: Mexico and Guatemala.

3. **Paspalum heterotrichon** Trin. Ic. *pl. 285.* 1836.

Paspalum heterotrichum paucispicatum Hack. Notizbl. Bot. Gart. Berlin 1: 328. 1897.

Stems up to 8 dm. tall, tufted; leaf-sheaths glabrous, excepting the usually ciliate margin; blades spreading or ascending, up to 1.5 dm. long, 2–3 mm. wide, flat, often involute on the margins, glabrous, with a ring of long hairs back of the ligule; racemes commonly 3–7, rarely 1 or 2, 3–7 cm. long, the brown wings 1–1.5 mm. wide; spikelets barbed at the base, elliptic, 2–2.5 mm. long, the first scale wanting, the second 2-nerved, the nerves marginal and ciliate with two kinds of hairs, one stouter than the other, the midnerve faint or wanting, the third scale ciliate only at the apex, faintly 3-nerved, the fruiting scale shorter than the outer scales.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Haïti; also in Colombia and Brazil.
ILLUSTRATION: Trin. Ic. *pl. 285.*

4. **Paspalum stellatum** Flügge, Gram. Monog. 62. 1810.

Paspalum cujabense Trin. Ic. *pl. 284.* 1836.

Stems up to 8 dm. tall, tufted; leaf-sheaths glabrous or pubescent; blades up to 2 dm. long, 2–4 mm. wide, involute above, glabrous or hirsute; racemes conjugate in pairs at the

summit of the stem, sometimes single, 3–12 cm. long, the brown rachis-wings 2–3.5 mm. wide; spikelets elliptic to obovate, 2.5–3 mm. long, singly arranged, the callus barbed, the first scale wanting, the second and third scales 2-nerved, the midnerve wanting, the nerves marginal, ciliate above the middle with two kinds of hairs, one much stouter than the other, below the middle with one kind, the fruiting scale a little shorter than the outer scales, obovate.

TYPE LOCALITY: South America.
DISTRIBUTION: Mexico to Panama; also in tropical South America.
ILLUSTRATION: Trin. Ic. *pl. 284.*

5. **Paspalum trachycoleon** Steud. Syn. Gram. 28. 1854.

Stems trailing, branched at the prostrate nodes, up to 1 m. long, hirsute at the nodes, otherwise smooth and glabrous; leaf-sheaths tuberculate-hispid with long spreading hairs; blades up to 2 dm. long and 18 mm. wide, softly pubescent on both surfaces, lanceolate, long-acuminate, papillose-hispid with long hairs near the base; inflorescence 1–1.5 dm. long, the ascending racemes 3–6 cm. long, the rachis up to 5 mm. wide, the wings membranous, yellowish-green, the green veins anastomosing; spikelets 2.5–3 mm. long, the first scale wanting, the second appressed-hirsute below, ciliate on the margins with two kinds of hairs, the one kind stouter than the other, the third scale glabrous, the fruiting scale with a tuft of hairs at the acute apex.

TYPE LOCALITY: Venezuela.
DISTRIBUTION: Guatemala and Honduras; also in tropical South America.

6. **Paspalum candidum** (Flügge) Kunth, Mém. Mus. Paris **2**: 68. 1815.

Reimaria candida Flügge, Gram. Monog. 214. 1810.

Stems 6–8 dm. long, branched, prostrate and rooting at the lower nodes, smooth and glabrous; leaf-sheaths smooth and glabrous; blades glabrous or pubescent, paler beneath, rough on the margins, lanceolate to elliptic, acute, 4–8 cm. long and up to 2 cm. wide; inflorescence 8–12 cm. long; racemes numerous, spreading or ascending, 1–2.5 cm. long, the rachis 1.5–2.5 mm. wide; spikelets white, 2–2.5 mm. long, elliptic, obtuse, the first and second scales wanting, the third scale thin, hyaline, obtuse, 3-nerved, the fruiting scale the same length, elliptic, obtuse.

TYPE LOCALITY: Near Puembo, Ecuador.
DISTRIBUTION: Guatemala to Costa Rica; also from Colombia to Peru.

7. **Paspalum scabrum** Scribn. Bull. U. S. Dep. Agr. Agrost. **4**: 36. 1897.

Stems up to 8 dm. tall, branched below, prostrate and rooting at the lower nodes, very rough, the nodes appressed-pubescent; leaf-sheaths very rough, usually longer than the internodes; blades 5–10 cm. long, 10–25 mm. wide, lanceolate, acute, papillose-hirsute, rough on the margins; racemes 30–50, 2–2.5 cm. long, the rachis about 2 mm. wide, rough; spikelets singly disposed in 1 row, white, 1.75 mm. long, obtuse, on short pubescent pedicels, the first and second scales wanting, the third scale thin, hyaline, 3-nerved, a little longer than the fruiting scale.

TYPE LOCALITY: Guatemala.
DISTRIBUTION: Guatemala.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 4: *pl. 3* (as *P. scabriusculum*).

8. **Paspalum longicuspe** Nash, sp. nov.

An aquatic grass. Stems up to 3 dm. tall, branched below, prostrate and rooting at the lower nodes; leaf-sheaths loose, smooth or a little roughened, glabrous; blades up to 1.5 dm. long, 8–10 mm. wide, glabrous, rough, linear-lanceolate; racemes numerous, ascending, 2–4 cm. long, whorled or scattered, the rachis very rough, extending beyond the spikelets in a naked point 1 cm. long or more; spikelets 2–2.5 mm. long, singly arranged in 1 row, glabrous, acute, the first scale wanting, the second and third scales 2-nerved, the midnerve wanting,

acute, very delicate and hyaline, the fruiting scale elliptic, a little shorter than the outer scales, obtuse.

Type collected near Guadalajara, Jalisco, Mexico, October 2, 1891, *C. G. Pringle 3854* (herb. Columbia Univ.).
DISTRIBUTION: Jalisco.

9. **Paspalum dissectum** L. Sp. Pl. ed. 2. 81. 1762.

Panicum dissectum L. Sp. Pl. 57. 1753.
Paspalum membranaceum Walt. Fl. Car. 75. 1788.
Paspalum vaginatum Ell. Bot. S. C. & Ga. 1: 109. 1816.
Paspalum Walterianum Schultes, in R. & S. Syst. Veg. Mant. 2: 166. 1824.
Paspalum tectum Steud. Syn. Gram. 29. 1854.
Paspalum Walteri Schultes; Chapm. Fl. S. U. S. 570. 1860.
Paspalum Drummondi C. Muell. Bot. Zeit. 19: 332. 1861.

A slender usually creeping branched plant, the racemes few, with a broad thin-margined rachis which encloses the spikelets. Stems up to 8 dm. long, compressed, frequently rooting at the lower nodes; leaf-sheaths compressed, loose, glabrous, commonly shorter than the internodes, or overlapping on the branches; blades 3–8 cm. long, 4–8 mm. wide, flat, smooth, glabrous, narrowed at both ends; inflorescence exserted, usually less than 1 dm. long; racemes 3–7, erect or ascending, 2–3 cm. long, the rachis acute, but not extending beyond the spikelets, about 2 mm. wide; spikelets singly disposed in two rows, 2–2.3 mm. long, 1.3–1.5 mm. wide, oval, glabrous.

TYPE LOCALITY: North America.
DISTRIBUTION: New Jersey to Missouri, and south to Florida and Texas; Cuba.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 326*; Bull. Tenn. Exp. Sta. 7: *f. 16*; Britt. & Brown, Ill. Fl. *f. 228*; Trin. Ic. *pl. 124*.

10. **Paspalum acuminatum** Raddi, Agrost. Bras. 25. 1823.

Stems up to 6 dm. long, glabrous, smooth, rooting at the lower nodes; leaf-sheaths smooth and glabrous, very rough on the margins; racemes 1 or 2, 4–5 cm. long, erect or ascending, the rachis about 3 mm. wide, smooth; spikelets 3–3.5 mm. long, singly disposed in 2 rows, elliptic, acute, glabrous, the first scale wanting, the second and third scales herbaceous, acute, 5-nerved, a little longer than the elliptic, obtuse fruiting scale, which is minutely pubescent at the apex.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Guatemala; also in Brazil.

11. **Paspalum prostratum** Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. **24**: 9. 1901.

Paspalum prostratum pygmaeum Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. 24: 9. 1901.

Stems 1–6 dm. long, branched, prostrate or ascending, glabrous; leaf-sheaths ciliate on the margins, glabrous or pubescent; blades up to 6 cm. long and 1 cm. wide, ovate to lanceolate, hirsute, acute; inflorescence 3–4 cm. long, of 3–10, rarely fewer, spreading or sometimes reflexed racemes 1–2.5 cm. long, the rachis 2–3 mm. wide, thin, acute, smooth, rough on the margins; spikelets singly disposed in 2 rows, elliptic to obovate, 2 mm. long, glabrous, obtuse, the first scale wanting, the second and third scales about equal, the second 3-nerved, the third 3–5-nerved, the fruiting scale elliptic, obtuse, about equaling the empty scales.

TYPE LOCALITY: Low lands near Patzcuaro, Michoacan.
DISTRIBUTION: Michoacan and Hidalgo.

12. **Paspalum mucronatum** Muhl. Cat. 8. 1813; Descr. Gram. 96. 1817.

Paspalum paniculatum Walt. Fl. Car. 75. 1788. Not *P. paniculatum* L. 1759.
Ceresia fluitans Ell. Bot. S. C. & Ga. 1: 109. 1816.
Paspalum natans Le Conte, Jour. de Phys. 91: 285. 1820.
Paspalum fluitans Kunth, Rév. Gram. 24. 1829.
Paspalum Frankii Steud. Syn. Gram. 19. 1854.

A branched floating or creeping grass, commonly rooting at the lower nodes, with broad flat leaf-blades, inflated leaf-sheaths, and numerous racemes disposed in panicles. Stems

1–several dm. long, generally stout, sometimes slender, glabrous, compressed, the nodes hirsute; leaf-sheaths much inflated, commonly strongly papillose-hirsute with spreading hairs, usually overlapping, compressed; blades 8–30 cm. long, 6–25 mm. wide, flat, glabrous, rough, narrowed at both ends; inflorescence exserted at maturity, commonly 1–2 dm. long; racemes 20–100, scattered, or sometimes apparently whorled, 1–13 cm. long, slender, spreading, the rachis membranous, 1–2 mm. wide, the apex acute, extending beyond the spikelets; spikelets singly disposed in two rows, elliptic, 1.2–1.5 mm. long and about 0.6 mm. wide, pubescent.

TYPE LOCALITY: Georgia.
DISTRIBUTION: Virginia to Oklahoma, and south to Florida and Mexico.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 325;* Bull. Tenn. Exp. Sta. 7: *f. 15;* Britt. & Brown, Ill. Fl. *f. 227;* Ell. Bot. S. C. & Ga. *pl. 6, f. 4.*

13. **Paspalum rigidifolium** Nash, Bull. N. Y. Bot. Gard. 1: 292. 1899.

A tufted branched nearly glabrous perennial, with narrow flat stiff leaf-blades. Stems 3–8 dm. tall; leaf-sheaths rather loosely embracing the stem, the basal ones softly pubescent with rather long spreading hairs; blades 2 dm. long or less, 3–5 mm. wide, elongate, narrowly linear, erect or ascending, flat, firm, glabrous with the exception of a row of erect stiff hairs just back of the ligule, rarely sparingly hispid or ciliate; racemes single, or rarely in 2's, 6–13 cm. long, straight or nearly so, the rachis about 1 mm. wide; spikelets in pairs, 2–2.5 mm. long, 1.7–2 mm. wide, oval or broadly obovate, on shorter glabrous or nearly glabrous pedicels, the first scale wanting, the second scale glabrous, or more or less pubescent with short spreading hairs, 5-nerved, the third scale glabrous, 5-nerved, or sometimes 4-nerved by the suppression of the midnerve, the fruiting scale triangular in cross-section, yellowish-white.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: District of Columbia; Florida to Texas; Cuba.

14. **Paspalum epile** Nash, in Small, Fl. SE. U. S. 72. 1903.

Paspalum latifolium Nash, in Small, Fl. SE. U. S. 73. 1903. Not *P. latifolium* Le Conte, 1820.

A glabrous branched perennial with flat often thick leaf-blades, and glabrous spikelets. Stems 5–10 dm. tall; leaf-sheaths glabrous, or the basal ones a little pubescent, loosely embracing the stem; blades flat, lanceolate to linear, glabrous or sparingly ciliate, 3 dm. long or less, 7–20 mm. wide; racemes single or in pairs or 3's, 6–12 cm. long, slender, curved or straight, the rachis 1 mm. wide or less; spikelets in pairs, 1.8–2 mm. long and about 1.5 mm. wide, broadly obovate, the first scale wanting, the second scale 3-nerved, glabrous, the third scale 3-nerved, or 2-nerved by the suppression of the midnerve, glabrous, the fruiting scale yellowish-white.

TYPE LOCALITY: Key West, Florida.
DISTRIBUTION: Key West; Louisiana; Texas; Jamaica.

15. **Paspalum Eggertii** Nash, Bull. N. Y. Bot. Gard. 1: 434. 1900.

A tufted branched perennial with flat glabrous leaf-blades and pubescent spikelets. Stems 4–6 dm. tall; leaf-sheaths somewhat compressed, the basal ones usually pubescent, the others ciliate on the margin; blades flat, the lower ones 5–10 cm. long, or in robust forms sometimes 2 dm., 6–10 mm. wide, of medium texture, glabrous, lanceolate to linear-lanceolate; racemes usually in pairs on the main stem and generally single on the branches, the former long-exserted, the latter partly included or somewhat exserted, 4–6 cm. long, the rachis about 0.5 mm. wide; spikelets in pairs, about 2.2 mm. long, oval or a little obovate, the first scale wanting, the second scale pubescent with spreading hairs, 3-nerved, the third scale more sparingly pubescent or glabrous, often 2-nerved by the suppression of the midnerve, the fruiting scale about one half as thick as broad, yellowish-white.

TYPE LOCALITY: Arkansas.
DISTRIBUTION: Georgia and Florida to Texas.

16. **Paspalum longepedunculatum** Le Conte, Jour. de Phys. 91: 284. 1820.

? *Paspalum debile* Muhl. Cat. 8. 1813; Descr. Gram. 91. 1817. Not *P. debile* Michx. 1803.
Paspalum ciliatifolium brevifolium Vasey, Proc. Acad. Phila. 1886: 285. 1886.
Paspalum kentuckiense Nash, in Britton, Man. 1039. 1901.

A tufted branched perennial with flat ciliate leaf-blades and glabrous spikelets. Stems 2.5–8 dm. tall; leaves mostly toward the base of the stem, giving it a naked appearance; leaf-sheaths glabrous, except the pilose margins; blades 1 dm. long or less, 4–10 mm. wide, lanceolate to linear, flat, of medium texture, glabrous, or the upper surface pubescent with short appressed hairs, a dense row of erect stiff hairs just back of the ligule, the margins conspicuously ciliate; racemes single or in 2's, 2–8 cm. long, rather slender, usually curved, the rachis about 0.5 mm. wide; spikelets in pairs, about 1.5 mm. long, 1–1.2 mm. wide, broadly obovate, glabrous, the first scale wanting, the second 3-nerved, the third 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: North Carolina.
DISTRIBUTION: Kentucky to Florida and Texas.
ILLUSTRATIONS: Bull. Tenn. Exp. Sta. 7: *f. 23;* Britt. & Brown, Ill. Fl. *f. 233.*

17. **Paspalum stramineum** Nash, in Britton, Man. 74. 1901.

A tufted branched perennial, with light yellowish-green foliage, flat leaf-blades which are appressed-pubescent on the upper surface, and usually pubescent spikelets. Stems 2–8 dm. tall; leaf-sheaths loose, the basal ones softly and densely pubescent, the remaining sheaths glabrous except on the ciliate margin; blades 2.5 dm. long or less, 5–10 mm. wide, flat, firm, erect, linear or lanceolate, appressed-pubescent on the upper surface and with a few scattered long hairs, the midrib of the lower surface also sometimes with a few long hairs, long-ciliate on the margins, and with a ring of long stiff hairs at the base on the upper surface just back of the ligule; racemes 4–10 cm. long, on the main stem usually 2, rarely 1 or 3, single on the branches; spikelets in pairs, on shorter pubescent pedicels, orbicular, 2 mm. in diameter, the first scale wanting, the second 3-nerved, pubescent with short spreading glandular-tipped hairs or sometimes glabrous, the third glabrous or nearly so, 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: [Near Mullen, Hooker County,] Nebraska.
DISTRIBUTION: Indiana to Colorado, south to Texas and Mexico.

18. **Paspalum ciliatifolium** Michx. Fl. Bor. Am. 1: 44. 1803.

Paspalum debile Ell. Bot. S. C. & Ga. 1: 105. 1816. Not *P. debile* Michx. 1803.
Paspalum setaceum ciliatifolium Vasey, Contr. U. S. Nat. Herb. 3: 17. 1892.
Paspalum blepharophyllum Nash, in Small, Fl. SE. U. S. 71. 1903.

A tufted branched perennial, with flat ciliate leaf-blades, and glabrous spikelets. Stems 4–8 dm. tall; leaf-sheaths rather loose, glabrous, or ciliate on the margin; blades 2.5 dm. long or less, 6–15 mm. wide, flat, linear to lanceolate, smooth and glabrous on both surfaces, conspicuously ciliate with long hairs on the margins, and with a row of stiff erect hairs at the base just back of the ligule; racemes single, or sometimes in 2's, 5–11 cm. long, usually more or less curved, the rachis 1 mm. wide or less; spikelets in pairs, 1.8–2.1 mm. long, 1.5–1.8 mm. wide, oval to broadly obovate, glabrous, the first scale wanting, the second and third scales 3-nerved, or the third rarely 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: Carolina.
DISTRIBUTION: Maryland to Colorado, and south to Florida, Texas, and Sonora; also in Bermuda.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 3* (as *P. setaceum*); Bull. Tenn. Exp. Sta. 7: *f. 22.*

19. **Paspalum Chapmani** Nash, Bull. N. Y. Bot. Gard. 1: 290. 1899.

? *Paspalum latifolium* Le Conte, Jour. de Phys. 91: 284. 1820.
Paspalum propinquum Nash, Bull. N. Y. Bot. Gard. 1: 291. 1899.

A tufted branched perennial, with ciliate leaf-blades and pubescent spikelets. Stems 8–10 dm. tall, smooth and glabrous; leaf-sheaths loose, the basal ones pubescent with short hairs, the remaining sheaths glabrous, or pubescent on the margin; blades 2 dm. long or less, 5–14 mm. wide, lanceolate to linear, erect or nearly so, smooth and glabrous on both surfaces, ciliate, the hairs arising from papillae; racemes 8–12 cm. long, straight or curved, the rachis flat and 0.8–1 mm. wide, the main stem usually bearing two racemes, the branches only one

raceme; spikelets in pairs, on shorter pubescent pedicels, oval, 1.8–2.2 mm. long, 1.8 mm. wide, the first scale wanting, the second and third scales densely pubescent with short glandular-tipped hairs, 3-nerved, or the third often 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: Florida.
DISTRIBUTION: South Carolina to Florida; Cuba; Guadeloupe.

20. **Paspalum psammophilum** Nash; Hitchc.

Rhodora 8: 205. 1906.

Paspalum prostratum Nash, in Britton, Man. 74. 1901. Not *P. prostratum* Scribn. & Merr. 1901.

A tufted branched softly pubescent perennial with prostrate stems, forming dense mats, flat leaf-blades, and densely pubescent spikelets. Stems 5–8 dm. long; leaf-sheaths softly and densely pubescent with short hairs; blades 3–10 cm. long, 5–8 mm. wide, lanceolate, erect or nearly so, of medium texture, softly and densely pubescent on both surfaces, ciliate on the margins; racemes on the main stem 2, rarely more or only 1, 5–8 cm. long, the rachis less than 1 mm. wide; spikelets in pairs, about 2 mm. long and 1.8 mm. wide, oval, densely pubescent, the first scale wanting, the second and third scales 3-nerved, or the third usually 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: [Kingsbridge,] New York City.
DISTRIBUTION: Massachusetts and New York to Delaware.

21. **Paspalum Bushii** Nash, in Britton, Man. 74. 1901.

A tufted branched pubescent perennial, with flat ciliate leaf-blades and pubescent spikelets. Stems erect or ascending, 4–10 dm. tall; leaf-sheaths, at least the lower ones, softly pubescent, ciliate on the margins; blades 5–20 cm. long, 5–15 mm. wide, lanceolate, erect or ascending, flat, rather firm in texture, softly and densely pubescent on both surfaces with short hairs more or less intermixed with long rather stiff hairs, ciliate on the margins; racemes usually in pairs on the main stem, 6–12 cm. long, the rachis less than 1 mm. wide; spikelets in pairs, 2–2.2 mm. long, 1.4–1.7 mm. wide, oval, the first scale wanting, the second and third scales densely pubescent, 3-nerved, or the third scale sometimes 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: [Bernie,] Missouri.
DISTRIBUTION: Illinois to Nebraska, and south to Texas and Mexico.

22. **Paspalum setaceum** Michx. Fl. Bor. Am. **1**: 43. 1803.

A tufted branched perennial with narrow flat pubescent leaf-blades and glabrous or pubescent spikelets. Stems slender, 2–7 dm. tall; basal leaf-sheaths densely pubescent with long hairs, the upper ones pubescent only on the margins; blades 1.5 dm. long or less, rarely somewhat longer, usually 2.5–5 mm. wide, sometimes a little broader, linear, strict and erect or ascending, flat, of medium texture, densely pubescent on both surfaces with long hairs; racemes single, slender, 4–8 cm. long, sometimes a little longer, the rachis about 0.6 mm. wide; spikelets either single or in pairs, on shorter puberulent pedicels, about 1.5 mm. long and 1.3 mm. wide, broadly obovate, the first scale wanting, the second 3-nerved, glabrous or pubescent with spreading glandular-tipped hairs, the third 2-nerved, the midnerve rarely if ever present, glabrous or pubescent, the fruiting scale yellowish-white.

TYPE LOCALITY: Carolina.
DISTRIBUTION: New Hampshire to Nebraska, and south to Florida and Texas; Cuba.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 26*; Britt. & Brown, Ill. Fl. *f. 231.*

23. **Paspalum Muhlenbergii** Nash, in Britton, Man. 75. 1901.

Paspalum ciliatifolium Le Conte, Journ. de Phys. 91: 284. 1820. Not *P. ciliatifolium* Michx. 1803.

A tufted branched perennial, with pubescent narrow leaf-blades and glabrous spikelets. Stems at first erect, finally reclining, 4–8 dm. long, smooth and glabrous; leaf-sheaths generally pubescent all over with long hairs; or sometimes only on the margins; blades 2 dm. long or less, rarely longer, usually 7–11 mm. wide, or sometimes narrower, linear to linear-lanceolate, flat, of medium texture, more or less pubescent on both surfaces with long hairs, ciliate on the

margins with generally long hairs; racemes single or in 2's, 5–10 cm. long, straight or curved, the rachis less than 1 mm. wide; spikelets in pairs, on shorter puberulent pedicels, about 2 mm. long and 1.8 mm. wide, oval or broadly obovate, glabrous or rarely pubescent, the first scale wanting, the second and third scales 3-nerved, or the third one rarely 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: Van Cortlandt Park, New York City.
DISTRIBUTION: New Hampshire to Oklahoma, and south to Florida and Texas.
ILLUSTRATION: Britt. & Brown, Ill. Fl. *f. 232.*

24. **Paspalum pubescens** Muhl.; Willd. Enum. Hort. Berol. 89. 1809.

A tufted branched perennial, with flat pubescent leaf-blades and glabrous spikelets. Stems 4–8 dm. tall, long-hirsute below the racemes; leaf-sheaths glabrous, or sometimes pubescent on the margins or toward the apex, the basal ones sometimes pubescent all over; blades 2.5 dm. long or less, 3–6 mm. wide, rarely broader, linear, flat, of medium texture, strongly pubescent on both surfaces with long spreading rather stiff hairs arising from papillae, if ciliate on the margins the hairs short; raceme usually 1, rarely 2 on the main stem, generally straight, or sometimes a little curved, 6–12 cm. long, rarely shorter; spikelets in pairs, on shorter puberulent pedicels, about 2 mm. long and 1.5–1.8 mm. wide, broadly obovate, glabrous, the first scale wanting, the second and third scales 3-nerved, or the third 2-nerved by the suppression of the midnerve, the fruiting scale yellowish-white.

TYPE LOCALITY: Carolina.
DISTRIBUTION: Connecticut and New York to Mississippi and Texas.

25. **Paspalum debile** Michx. Fl. Bor. Am. **1**: 44. 1803.

Paspalum villosissimum Nash, Bull. Torrey Club **24**: 40. 1897.

A tufted branched yellowish-green perennial with rather stout stems, flat leaf-blades which are pubescent with long hairs and crowded at the base of the stem, and pubescent spikelets. Stems 4–10 dm. tall; leaf-sheaths very densely pubescent with long white spreading hairs; blades 2 dm. long or less, 3–10 mm. wide, linear-lanceolate to lanceolate, truncate or slightly rounded at the base, flat, thick, pubescent with very long white hairs; racemes single, rarely with an additional one below, slender, usually strict or the longer a little curved, 7–11 cm. long, the rachis about 0.5 mm. wide; spikelets in pairs, on hispidulous pedicels about one half their length, 1.5–1.8 mm. long, 1.5 mm. wide, broadly obovate, the first scale usually wanting, rarely present, the second and third scales densely pubescent with spreading glandular-tipped hairs, the second scale 3-nerved, the third 2-nerved, or the midnerve very rarely present, the fruiting scale yellowish-white.

TYPE LOCALITY: Carolina.
DISTRIBUTION: South Carolina to Florida and Texas.

26. **Paspalum supinum** Bosc; Poir. in Lam. Encyc. **5**: 29. 1804.

Paspalum hirsutum Poir. in Lam. Encyc. **5**: 28. 1804. Not *P. hirsutum* Retz. 1781.
Paspalum dasyphyllum Ell. Bot. S. C. & Ga. 1: 105. 1816.
Paspalum setaceum supinum Trin. Ic. *pl. 130.* 1828.
Paspalum ciliatifolium dasyphyllum Chapm. Fl. S. U. S. ed. 3. 578. 1897.

A tufted branched yellowish-green perennial, with flat leaf-blades which are pubescent with long yellowish hairs, and pubescent spikelets. Stems 2–6 dm. tall, stout; leaf-sheaths densely pubescent with long spreading yellowish hairs; blades 2 dm. long or less, usually 1–2 cm. broad, sometimes a little narrower, lanceolate, flat, thick, densely pubescent with long spreading yellowish hairs; racemes usually but little exserted, on the main stem in 2's or 3's, single on the branches, 4–10 cm. long, rather stout, the rachis about 1 mm. wide; spikelets in pairs, on shorter puberulent pedicels, 2–2.2 mm. long and about 1.8 mm. wide, broadly obovate, the first scale wanting, the second usually pubescent with spreading glandular-tipped hairs, sometimes glabrous, 3-nerved, the third glabrous, usually 2-nerved, sometimes 3-nerved, the fruiting scale yellowish-white.

TYPE LOCALITY: Carolina.
DISTRIBUTION: South Carolina to Illinois, and south to Florida and Texas.
ILLUSTRATION: Trin. Ic. *pl. 130.*

27. **Paspalum pedunculatum** Poir. in Lam. Encyc. Suppl. **4**: 315. 1816.

Paspalum decumbens Sw. Prodr. 22. 1788. Not *P. decumbens* Rottb. 1778.
? *Paspalum nutans* Lam. Tab. Encyc. 1: 175. 1791.
Panicum decumbens R. & S. Syst. Veg. **2**: 429. 1817.
Paspalum curvistachyum Raddi, Agrost. Bras. 26. 1823.
Paspalum vaginiflorum Steud. Syn. Gram. 19. 1854.

Stems up to 3 dm. tall or longer, branched and rooted at the lower nodes, with one or more leafless pubescent flower-bearing branches from the upper axil; leaf-sheaths ciliate, otherwise glabrous or pubescent; blades up to 7 cm. long, rarely longer, up to 12 mm. wide, lanceolate to ovate-lanceolate, acute, flat, ciliate, the surface usually pubescent, rarely glabrous; racemes straight or curved, single, 1.5–4 cm. long, the rachis flat, about 0.5 mm. wide, usually pubescent, at least below, rarely glabrous; spikelets in pairs, glabrous, 1.3–1.5 mm. long, 1–1.2 mm. wide, broadly obovate or oval, obtuse, often apiculate, the first scale orbicular, obtuse or acute, rarely exceeding one third of the spikelet, the second scale about half as long as the spikelet, orbicular, rounded at the apex, 3-nerved, the third scale as long as the spikelet, 3-nerved, or sometimes with an obscure additional lateral nerve, the fruiting scale about as long as the third scale or a little shorter, yellowish-green, broadly oval, obtuse, strongly roughened with longitudinal rows of papillae.

TYPE LOCALITY: Dutch Guiana.
DISTRIBUTION: Jamaica and Cuba to Porto Rico, and from Guatemala to Panama; also in tropical South America.
ILLUSTRATIONS: Trin. Ic. *pl. 146*; Kunth, Rév. Gram. *pl. 16*.

28. **Paspalum guatemalense** Bartlett, Proc. Am. Acad. **43**: 49. 1907.

? *Dimorphostachys adoperiens* Fourn Mex. Pl. Gram. 15. 1881.

Stems up to 8 dm. long, glabrous, branched below, with leafless flower-bearing branches from the uppermost axil; leaf-sheaths ciliate, papillose-hispid; blades up to 1.5 dm. long, 10–15 mm. wide, lanceolate, sometimes cordate at the base, flat, glabrous, or sometimes ciliate; racemes 2 or 3, 3–6 cm. long, the rachis less than 1 mm. wide; spikelets in pairs, 2 mm. long, 1.8 mm. wide, nearly orbicular, glabrous, the first scale small, orbicular, obtuse, or that of the lower spikelet of each pair sometimes larger, lanceolate or ovate, acute, the second scale a little shorter than the spikelet, 5-nerved, the third scale 5-nerved, the fruiting scale orbicular, strongly roughened with longitudinal rows of papillae.

TYPE LOCALITY: Swamp at Gualan, Zacapa, Guatemala.
DISTRIBUTION: Guatemala.

29. **Paspalum Lloydii** Nash, sp. nov.

Stems sometimes 1 m. long, usually shorter, finally branched and prostrate and rooted at the lower nodes, with a leafless pubescent flower-bearing branch from the upper axil; leaf-sheaths ciliate, otherwise glabrous; blades up to 1 dm. long, 5–15 mm. wide, lanceolate to elliptic, glabrous or pubescent, often ciliate; racemes single, or sometimes in 2's–4's, straight or curved, 3–5 cm. long, the rachis about 0.5 mm. wide, glabrous; spikelets in pairs, glabrous, 1.8–2 mm. long, 1–1.2 mm. wide, elliptic, obtuse, the first scale wanting, the second scale shorter than the spikelet, 3-nerved, the third scale as long as the spikelet, 5-nerved, the fruiting scale yellowish-green, oval to obovate, strongly roughened with longitudinal rows of papillae.

Type collected at Montpelier, Dominica, 1903, *Francis E. Lloyd 590* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Dominica, Guadeloupe, St. Vincent, and Grenada; also in Colombia.

30. **Paspalum culiacanum** Vasey, Contr. U. S. Nat. Herb. **1**: 281. 1893.

Stems tufted, branched, up to 8 dm. tall, erect, glabrous; leaf-sheaths glabrous, often ciliate on the margin; blades up to 2 dm. long and 1 cm. wide, linear-lanceolate, ascending, firm, smooth and glabrous, rough on the margins; racemes 2–5, 5–8 cm. long, spreading or ascending, the lower ones often stalked; spikelets more than 2 mm. long, oval to obovate, obtuse, glabrous,

yellowish, the first scale small, present or wanting in the lower spikelet of each pair and wanting in the upper spikelet, the second and third scales yellowish, the nerves green and very prominent, the second scale 5-nerved, the third 3-nerved, the fruiting scale yellowish, oval, strongly roughened with longitudinal rows of papillae.

TYPE LOCALITY: Mountains of Culiacan, Sinaloa.
DISTRIBUTION: Known only from the type locality.

31. **Paspalum macrophyllum** H.B.K. Nov. Gen. & Sp. 1: 92. 1815.

Paspalum planifolium Fourn. Mex. Pl. Gram. 10. 1881.
Paspalum macrophyllum piliferum Fourn. Mex. Pl. Gram. 11. 1881.
Dimorphostachys Botterii Fourn. Mex. Pl. Gram. 14. 1881.
Dimorphostachys paspaloides Fourn. Mex. Pl. Gram. 14. 1881.
Paspalum setaceum pubiflorum Vasey, Contr. U. S. Nat. Herb. 1: 114. 1891.

Stems tufted, up to 1.5 m. tall, glabrous, with usually leafless flower-bearing branches in the uppermost axil; leaf-sheaths often ciliate, the lower ones commonly papillose-hispid, the upper ones glabrous; blades up to 3 dm. long or more, the larger 1.5–2.5 cm. wide, rough on the margins and often ciliate, flat, sometimes papillose-hispid on the surfaces; racemes 5–15, rarely fewer, spreading or ascending, up to 1 dm. long, the rachis 1 mm. wide; spikelets 2–2.7 mm. long, 1.4 mm. wide, in pairs, elliptic to obovate, the first scale wanting, or sometimes present in the lower spikelet, the second 5-nerved, appressed-pubescent, equaling or a little shorter than the spikelet, often surrounding the base of the spikelet, the third scale 3–5-nerved, glabrous or appressed-pubescent, the fruiting scale yellowish, roughened with papillae.

TYPE LOCALITY: Near Ibagué, Colombia.
DISTRIBUTION: Central and southern Mexico; also in Colombia.

32. **Paspalum Langei** (Fourn.) Nash.

Dimorphostachys Langei Fourn. Mex. Pl. Gram. 14. 1881.
Dimorphostachys Drummondii Fourn. Mex. Pl. Gram. 15. 1881. Not *P. Drummondii* C. Müll. 1861.
Paspalum Drummondii Vasey, Contr. U. S. Nat. Herb. **3**: 18. 1892.
Paspalum oricola Millsp. & Chase, Field Columb. Mus. Publ. Bot. **3**: 28. 1903.

A nearly glabrous branched perennial, with flat leaf-blades and pubescent spikelets. Stems 3–7 dm. tall, glabrous; leaf-sheaths glabrous, excepting the ciliate margin; blades up to 2 dm. long, 8–15 mm. wide, erect, glabrous, sometimes ciliate, or with a few scattered hairs on the upper surface; racemes 2–4, rarely more, 4–9 cm. long, the rachis about 0.5 mm. wide; spikelets in pairs, 2–2.3 mm. long and about 1.5 mm. wide, obovate or elliptic, the first scale small, nerveless, rarely wanting in the upper spikelet, the second rather strongly pubescent, the third 5-nerved, glabrous, the fruiting scale roughened with longitudinal rows of papillae.

TYPE LOCALITY: Hacienda de Jovo, Vera Cruz.
DISTRIBUTION: Louisiana to Mexico and Guatemala.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. 3: *pl.* opp. 28.

33. **Paspalum ciliiferum** (Nash) Hitchc. Contr. U. S. Nat. Herb. **12**: 201. 1909.

Dimorphostachys ciliifera Nash, in Small, Fl. SE. U. S. 78. 1903.

A tall branched perennial, with pubescent ciliate flat leaf-blades, and pubescent spikelets. Stems glabrous, or sometimes papillose-hirsute toward the apex, 7–11 dm. tall; leaf-sheaths ciliate, otherwise glabrous, or the lower ones papillose-hirsute; blades up to 3 dm. long and 1.5 cm. wide, erect or nearly so, ciliate, pubescent on the surfaces with scattered hairs; racemes 2 or 3, finally spreading, 7–9 cm. long, the rachis about 1 mm. wide; spikelets crowded in pairs, 2.5–2.8 mm. long and about 1.8 mm. broad, the first scale glabrous, very small or sometimes one half as long as the spikelet and acuminate, nerveless, or in the larger ones 1-nerved, the second and third scales 5-nerved, the second glabrous, the third pubescent with short appressed hairs, the fruiting scale roughened with longitudinal rows of papillae.

TYPE LOCALITY: Manatee, Florida.
DISTRIBUTION: Florida and Cuba.

34. **Paspalum variabile** (Fourn.) Nash.

?*Paspalum oaxacense* Steud. Syn. Gram. 21. 1854.
Dimorphostachys Schaffneri Fourn. Mex. Pl. Gram. 15. 1881.
Dimorphostachys Schaffneri remotispicula Fourn. Mex. Pl. Gram. 15. 1881.
Dimorphostachys variabilis Fourn. Mex. Pl. Gram. 15. 1881.
?*Dimorphostachys Ghiesbreghtii* Fourn. Mex. Pl. Gram. 16. 1881.
?*Dimorphostachys oajacensis* Fourn. Mex. Pl. Gram. 16. 1881.
Paspalum Schaffneri Scribn. in Millsp. Field Columb. Mus. Publ. Bot. **2**: 24. 1900. Not *P. Schaffneri* Griseb. 1881.

Stems tufted, up to 1 m. tall, glabrous, with leafless flower-bearing branches from the uppermost axil; leaf-sheaths ciliate, otherwise glabrous; blades up to 2.5 dm. long, 1–2 cm. wide, lanceolate, ciliate, otherwise glabrous; racemes usually 2, rarely 1 or 3, on the main stem, commonly single on the branches; spikelets in pairs, 3–3.2 mm. long and about 1.5 mm. wide, pubescent, the first scale of the lower spikelet of each pair 1–3-nerved, lanceolate, acuminate, sometimes nearly as long as the spikelet, that of the upper spikelet shorter, orbicular to ovate, obtuse or acute, 1–3-nerved, the second scale 5-nerved, as long as the spikelet, the third scale 5-nerved, the fruiting scale oval, strongly roughened with longitudinal rows of papillae.

TYPE LOCALITY: Mirador, Vera Cruz.
DISTRIBUTION: Central and southern Mexico.

35. **Paspalum pulchellum** H.B.K. Nov. Gen. & Sp. **1**: 90. 1815.

Reimaria elegans Flügge, Gram. Monog. 216. 1810. Not *Paspalum elegans* Flügge, 1810.

A tufted perennial. Stems up to 7 dm. tall, glabrous, erect; leaf-sheaths glabrous or sparingly hirsute with ascending hairs; blades up to 1 dm. long, 1–2 mm. wide, papillose-hirsute with spreading hairs, the blades on the innovations and base of the stem elongate, those on the upper stem short or rudimentary; racemes in pairs, usually separated by a marked interval, rarely contiguous, 2–5 cm. long, the flexuous rachis about 0.5 mm. wide; spikelets singly arranged, 1.5–1.75 mm. long, 0.8–1 mm. wide, elliptic to oval, glabrous, the first and second scales wanting, the third scale brown, 3-nerved, the fruiting scale as long as the third scale, strongly convex, elliptic to oval, obtuse.

TYPE LOCALITY: Cumana, Venezuela.
DISTRIBUTION: Cuba; Hispaniola; also in tropical South America.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 26.*

36. **Paspalum alterniflorum** A. Rich. in Sagra, Hist. Cuba **11**: 299. 1850.

Paspalum dolichophyllum Hack. Inf. An. Estac. Centr. Agron. Cuba 1: 409. 1906.

Stems densely tufted, up to 1 m. tall, erect, glabrous, simple; leaves strongly striate; sheaths glabrous; blades up to 4 dm. long, 1.5–2 mm. wide when flat, usually involute, the lower surface glabrous, the upper surface pubescent with short hairs and near the base with a few long ones; racemes 2–4, erect, 6–10 cm. long, straight, about 1 mm. wide; spikelets 2.5–3 mm. long and about 1 mm. wide, ovate to elliptic-ovate, the outer scales 3-nerved, the first scale wanting, the second pubescent with long hairs, as is also sometimes the third, the fruiting scale oval, much shorter than the other scales.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Cuba and Haïti.

37. **Paspalum filiforme** Sw. Prodr. 22. 1788.

Paspalum Swartzianum Flügge, Gram. Monog. 96. 1810.
Paspalum longifolium Steud. Syn. Gram. 21. 1854.
Paspalum approximatum Doell, in Mart. Fl. Bras. **2**^{2}: 82. 1877.

A tufted perennial. Stems erect, up to 8 dm. tall, simple; leaves strongly striate; sheaths glabrous, gradually passing into the blade; blades involute, up to 3 dm. long or more, glabrous, or often hirsute on the upper surface near its junction with the sheath; raceme single, or rarely 2, usually curved, up to 1 dm. long, the rachis less than 1 mm. wide; spikelets singly disposed, 2–2.5 mm. long, 1.2–1.6 mm. wide, on hispidulous pedicels, glabrous, the first scale wanting, the

second 5-nerved, crumpled, much larger than the fruiting scale, the third scale usually 3-nerved, rarely more, closely appressed to the fruiting scale, which is oval, obtuse, yellowish.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Jamaica; Cuba; also in Brazil.

38. **Paspalum leptocaulon** Nash, sp. nov.

A glabrous tufted perennial. Stems erect, simple, up to 4 dm. tall, slender; leaf-sheaths striate, with a few long hairs at the apex; blades with a white stripe down the center of the upper surface, slender, involute, up to 1 dm. long, those on the innovations even longer; raceme single, curved, 3–6 cm. long, long-exserted, the rachis about 0.5 mm. wide; spikelets singly disposed in 2 rows, appressed, 1.5 mm. long and 0.8 mm. wide, elliptic, obtuse, the first scale wanting, the second 5-nerved, the third 3-nerved, the fruiting scale yellowish-green, a trifle shorter than the others, elliptic, smooth.

Type collected at Lacovia, Jamaica, September 16, 1907, *N. L. Britton 1475* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

39. **Paspalum capillifolium** Nash, sp. nov.

A glabrous, densely tufted low perennial. Stems 1 dm. tall or less, slender, simple; leaves striate, mostly on the innovations; blades filiform, curved, 3–6 cm. long; raceme single, 2–4 cm. long; spikelets singly disposed, 1.75 mm. long, 0.6 mm. wide, elliptic-oblong, obtuse, glabrous, the first scale wanting, the second and third scales 3-nerved, the fruiting scale elliptic, about as long as the outer scales.

Type collected in palm barren, Santa Clara, Cuba, March 29–31, 1910, *Britton & Wilson 6116* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

40. **Paspalum rottboellioides** Wright; Sauv. Anal. Acad. Ci. Habana 8: 204. 1871.

Stems tufted, slender, up to 6 dm. tall, glabrous, simple; leaves papillose-hirsute with spreading hairs, mostly on the innovations and the base of the stem; blades flat or involute, up to 7 cm. long, erect or ascending; racemes 1 or 2, 3–6 cm. long, straight or curved, the flexuous rachis about 0.75 mm. wide; spikelets singly disposed, 2.3–3 mm. long, 1–1.2 mm. wide, elliptic-oblong, obtuse, the first scale wanting, the second and third scales 3-nerved, the second scale pubescent with long appressed hairs, the third glabrous, the fruiting scale elliptic, obtuse, a little shorter than the other scales.

TYPE LOCALITY: In sandy savannas of the Vuelta de Abajo, Cuba.
DISTRIBUTION: Cuba.

41. **Paspalum Leoninum** Chase, Bot. Gaz. **51**: 301. 1911.

Stems tufted, slender, glabrous, 1.5–3.5 dm. tall, simple, with only 1 or 2 leaves; sheaths glabrous or sparsely pubescent; blades flat or somewhat involute, 3–7 cm. long, 1–2 mm. wide, usually curved, glabrous, or puberulent on the upper surface, with a few stiff hairs on the margin; raceme single, 2–3.5 cm. long, curved; spikelets singly disposed, 1.3–1.5 mm. long, 0.7 mm. wide, elliptic, glabrous, on short flattened hispidulous pedicels, the first scale wanting, the second 3-nerved, the third 2-nerved by the suppression of the midnerve which is sometimes present at the apex, the fruiting scale about as long as the outer scales.

TYPE LOCALITY: Obispo Hill, near Sancti Spiritus, Cuba.
DISTRIBUTION: Cuba.

42. **Paspalum breve** Chase; Hitchc. in Urban, Symb. Ant. **7**: 166. 1912.

A low tufted perennial. Stems simple, up to 8 cm. tall, slender, glabrous; sheaths strongly striate, ciliate, often sparingly pubescent at the apex, the uppermost one bladeless; blades flat, up to 7 cm. long, 1.5–3 mm. wide, linear, glabrous; raceme single, exserted, straight, 7–12 mm. long, the rachis about 0.7 mm. wide; spikelets singly disposed, glabrous, about 1.3 mm. long and 1 mm. wide, broadly oval, obtuse, the first scale wanting, the second 5-nerved, or sometimes

4-nerved by the suppression of the midnerve, the third 3-nerved, the fruiting scale white to yellowish, about as long as the other scales, broadly oval.

TYPE LOCALITY: Near Marianao, Province of Havana, Cuba.
DISTRIBUTION: Province of Havana.

43. **Paspalum rupestre** Trin. Linnaea **10**: 293. 1836.

A densely tufted perennial. Stems up to 5 dm. tall, glabrous, slender, simple, or sometimes branched at the base; leaf-sheaths glabrous or sparingly hirsute; blades up to 1 dm. long, 4–6 mm. wide, glabrous or sometimes sparingly hirsute, occasionally sparingly ciliate; racemes 1–3, 2–4 cm. long, straight or curved, erect or ascending, the rachis about 0.5 mm. wide; spikelets singly disposed, 1.5 mm. long, 0.9 mm. wide, elliptic, appressed-pubescent, the first scale wanting, the second and third scales 3-nerved, the fruiting scale oval, yellowish.

TYPE LOCALITY: On dry rocks, Cuba.
DISTRIBUTION: Andros; Jamaica; Cuba; Haïti.

44. **Paspalum parviflorum** Rohdé; Flügge, Gram. Monog. 98. 1810.

An annual grass. Stems up to 1.5 dm. tall, erect, branched, the nodes somewhat pilose; leaf-sheaths lax, commonly shorter than the internodes, hirsute; blades linear, narrow, flat, covered with long spreading hairs; axis of the inflorescence 4–6 mm. long, the axils pilose; racemes 2 or 3, 8–14 mm. long, alternate, erect, finally horizontal or reflexed, the rachis strongly flexuous, as wide as the spikelets, hispidulous on the margins; spikelets singly disposed, on somewhat longer pedicels, elliptic, obtuse, glabrous, the first scale wanting, the second and third scales equal, 2-nerved, the fruiting scale yellowish, as long as the spikelet.

TYPE LOCALITY: Porto Rico.
DISTRIBUTION: Porto Rico; also in Brazil. No material of this has been seen, and the above is compiled from the original description.
ILLUSTRATION: Trin. Ic. *pl. 116.*

45. **Paspalum nanum** Wright; Griseb. Cat. Pl. Cub. 230. 1866.

? *Paspalum Lindenianum* A. Rich. in Sagra, Hist. Cuba 11: 299. 1850.
Paspalum caudicatum Wright; Sauv. Anal. Acad. Ci. Habana **8**: 205. 1871.

Stems tufted, up to 6 dm. tall, glabrous, the nodes barbed; leaves papillose-hirsute with spreading hairs; blades up to 1.5 dm. long, 3–4 mm. wide, flat; raceme single, or sometimes with another a short distance below, 3–8 cm. long, the rachis about 1 mm. wide; spikelets singly disposed, 2–2.5 mm. long, 1.5–1.8 mm. wide, oval, glabrous, the first scale wanting, the second and third scales transversely wrinkled, 5-nerved, the fruiting scale oval, yellowish.

TYPE LOCALITY: In savannas, near Hanabana, Province of Matanzas, Cuba.
DISTRIBUTION: Cuba.

46. **Paspalum laeve** Michx. Fl. Bor. Am. **1**: 44. 1803.

Paspalum undulosum Le Conte, Jour. de Phys. **91**: 284. 1820.
Paspalum floridanum Le Conte, Jour. de Phys. **91**: 284. 1820. Not *P. floridanum* Michx. 1803.
Paspalum angustifolium Le Conte, Jour. de Phys. **91**: 285. 1820.
Paspalum Leconteanum Schultes, in R. & S. Syst. Veg. Mant. **2**: 168. 1824.
Paspalum punctulatum Bertol. Mem. Accad. Sci. Bologna **2**: 599. 1850.
? *Paspalum alternans* Steud. Syn. Gram. 26. 1854.
Paspalum laeve undulosum Vasey, Bull. Torrey Club **13**: 165. 1886.
Paspalum laeve angustifolium Vasey, Bull. Torrey Club **13**: 165. 1886.
Paspalum laeve brevifolium Vasey, Contr. U. S. Nat. Herb. **3**: 18. 1892.
Paspalum australe Nash, in Britton, Man. 1039. 1901.

A nearly glabrous perennial, with few racemes and glabrous spikelets. Stems 3–10 dm. tall, tufted; leaf-sheaths glabrous or hirsute on the margins, compressed; blades 2–6 dm. long. 5–8 mm. broad, flat, glabrous, or the upper surface with a few hairs; racemes 2–6, 3–10 cm, long, the rachis less than 1 mm. wide; spikelets singly disposed, 2–3 mm. long and 1.8–2.5 mm. wide, oval, the first scale wanting, the second and third scales firm, 5-nerved, the lateral nerves approximate, the fruiting scale yellowish-green, at least half as thick as broad.

TYPE LOCALITY: Georgia.
DISTRIBUTION: Maryland to Kansas, and south to Florida and Texas.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 1;* Bull. U. S. Dep. Agr. Agrost. **7**: *f. 27;* **20**: *f. 19;* Bull. Tenn. Exp. Sta. **7**: *f. 21;* Britt. & Brown, Ill. Fl. *f. 234;* Mem. Accad. Sci. Bologna **2**: *pl. 42.*

47. **Paspalum longipilum** Nash, Bull. N. Y. Bot. Gard. **1**: 435. 1900.

A somewhat tufted perennial with flat leaf-blades and glabrous spikelets, the leaf-sheaths hirsute with long hairs. Stems 6–8 dm. tall, simple; leaf-sheaths much compressed, keeled, at least the lower ones densely papillose-hirsute with long spreading hairs; blades 2 dm. long or less, less than 1 cm. wide, linear, often folded, erect, rather firm, strongly pubescent on the upper surface with long spreading hairs, nearly glabrous beneath; racemes 2 or 3, ascending, 5–7 cm. long, the rachis flat, somewhat flexuous, about 1 mm. wide; spikelets singly disposed, oval, 2.5–3 mm. long and 2–2.5 mm. wide, the first scale wanting, the second and third scales 5-nerved, the lateral nerves approximate, the fruiting scale yellowish-white.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: Florida.

48. **Paspalum plenipilum** Nash, in Britton, Man. 73. 1901.

Paspalum laeve pilosum Scribn. Bull. Tenn. Exp. Sta. **7**: 34. 1894. Not *P. pilosum* Lam. 1791.
Paspalum praelongum Nash, in Small, Fl. SE. U. S. 74. 1903.

A tufted pubescent perennial with flat leaf-blades and glabrous spikelets. Stems 5–10 dm. tall, simple; leaf-sheaths compressed, tuberculate-hirsute with long spreading hairs; blades 3 dm. long or less, 6–10 mm. wide, erect, flat, hirsute on both surfaces with long spreading hairs; racemes 2–4, spreading or ascending, 4–8 cm. long, the rachis about 1 mm. wide; spikelets singly disposed, oval, about 2.5 mm. long and 2 mm. broad, the first scale wanting, the second and third scales 5-nerved, the lateral nerves near the margin, approximate, the fruiting scale one half as thick as broad or nearly so.

TYPE LOCALITY: [Clifton, Passaic County,] New Jersey.
DISTRIBUTION: New Jersey to Missouri, and south to Florida and Mississippi.

49. **Paspalum circulare** Nash, in Britton, Man. 73. 1901.

A tufted perennial with flat leaf-blades and orbicular glabrous spikelets. Stems 5–10 dm. tall, simple; leaf-sheaths compressed, tuberculate-hirsute with spreading or ascending hairs; blades 3 dm. long or less, 5–8 mm. wide, erect, flat, more or less hirsute on both surfaces; racemes 2–4, erect or ascending, 6–10 cm. long, the rachis about 1 mm. wide; spikelets singly disposed, orbicular, about 3 mm. in diameter, the first scale wanting, the second and third scales thin and usually wrinkled when dry, 5-nerved, the lateral nerves near the margin and approximate but quite distinct, the fruiting scale with its thickness one fourth to one third of the diameter.

TYPE LOCALITY: Bergen County, New Jersey.
DISTRIBUTION: New York to Delaware, Missouri, and Texas.

50. **Paspalum praecox** Walt. Fl. Car. 75. 1788.

Paspalum lentiferum Lam. Tab. Encyc. **1**: 175. 1791.
Paspalum virgatum Le Conte, Jour. de Phys. **91**: 284. 1820.

A usually slender glabrous perennial, with flat often short leaf-blades, and glabrous flat spikelets. Stems compressed, 6–12 dm. tall; leaf-sheaths compressed, glabrous; blades 2 dm. long or less, 4–6 mm. wide, linear, erect, flat, glabrous; racemes usually 4–6, rarely more or fewer, ascending, 2–5 cm. long; spikelets in pairs, nearly flat on both sides, yellowish-green, orbicular to oval, 2.2–2.5 mm. long, 1.8–2.2 mm. wide, the first scale wanting, the second and third scales 3-nerved, the fruiting scale flat, striately roughened with conspicuous papillae.

TYPE LOCALITY: South Carolina.
DISTRIBUTION: North Carolina to Florida and Texas.
ILLUSTRATION: Trin. Ic. *pl. 137.*

51. **Paspalum glaberrimum** Nash, in Small, Fl. SE. U. S. 76. 1903.

Paspalum amplum Nash, in Small, Fl. SE. U. S. 77. 1903.

A glabrous or sparingly pubescent stout perennial, with long flat leaf-blades and glabrous flat spikelets. Stems 1–1.5 m. tall; leaf-sheaths flattened, the outer basal ones hirsute below, the remainder glabrous, or sometimes hirsute at the apex; blades 3–4 dm. long, 5–8 mm. wide, erect or nearly so, flat, glabrous on the lower surface, the upper surface pubescent; racemes 3–8, erect or ascending, the lower ones commonly 7–15 cm. long, sometimes shorter; spikelets orbicular to oval, 3–3.5 mm. long, 2.5–3 mm. wide, flat on both sides, the first scale wanting, the second and third scales yellowish-green, 3-nerved, the fruiting scale white, flat, strongly roughened with conspicuous papillae.

TYPE LOCALITY: Southern peninsular Florida.
DISTRIBUTION: Georgia and Florida to Mississippi.

52. **Paspalum Curtisianum** Steud. Syn. Gram. 26. 1854.

Paspalum praecox Curtisianum Vasey, Bull. Torrey Club **13**: 165. 1886.
Paspalum Kearneyi Nash, in Small, Fl. SE. U. S. 77. 1903.

A strongly pubescent perennial with long leaf-blades and glabrous flat spikelets. Stems 8–15 dm. tall; leaf-sheaths strongly hirsute, compressed; blades up to 5 dm. long and often 1 cm. wide, linear, erect, flat, strongly papillose-hirsute, especially above, with long hairs; racemes 5–10, rarely fewer, spreading or ascending, 3–10 cm. long; spikelets single or in pairs, circular, 2.5–3 mm. in diameter, the first scale wanting, the second and third scales 3-nerved, the fruiting scale flat, striately roughened with conspicuous papillae.

TYPE LOCALITY: Carolina.
DISTRIBUTION: South Carolina to Florida and Mississippi.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 329*.

53. **Paspalum tardum** Nash, in Small, Fl. SE. U. S. 76. 1903.

A pubescent perennial, with compressed leaf-sheaths and glabrous flat spikelets. Stems 6–13 dm. tall; leaf-sheaths compressed, the lower and outer basal ones usually more or less pubescent with long hairs, and the others generally so at the apex; blades up to 3 dm. long and 1 cm. wide, erect or nearly so, flat, or folded when dry, hirsute on the upper surface below the middle, increasingly so toward the base where the hairs are very dense and long; racemes usually 3 or 4, sometimes only 2, rarely more numerous, commonly 3–6 cm. long, sometimes shorter; spikelets single or in pairs, orbicular or nearly so, 2.2–2.5 mm. in diameter, the first scale wanting, the second and third scales 3-nerved, the flowering scale flat, striately roughened with conspicuous papillae.

TYPE LOCALITY: Florida.
DISTRIBUTION: Florida to Texas.

54. **Paspalum lividum** Trin.; Schlecht. Linnaea **26**: 383. 1853.

A glabrous perennial with flat leaf-blades and glabrous bright-green elliptic spikelets which are much compressed. Stems 6–10 dm. tall; leaf-sheaths compressed, keeled, smooth, glabrous, except on the margins; blades 3 dm. long or less, 3–5 mm. wide, more or less pubescent on the upper surface; racemes 3–7, erect or ascending, 2.5–5 cm. long, the rachis, which is often setiferous on the margins, about 1.5 mm. wide; spikelets in pairs, bright-green, often tinged with purple, about 2.5 mm. long and 1.5 mm. wide, elliptic, acute or acutish, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish-white and only slightly convex in cross-section.

TYPE LOCALITY: Hacienda de La Laguna, near Jalapa, Vera Cruz.
DISTRIBUTION: Louisiana to Mexico and Guatemala; Cuba; also in tropical South America.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 330*.

55. **Paspalum Buckleyanum** Vasey, Bull. Torrey Club **13**: 167. 1886.

A glabrous perennial with flat leaf-blades and pubescent compressed spikelets. Stems erect, 6–8 dm. tall; leaf-sheaths smooth and glabrous; blades 2 dm. long or less, 2–4 mm. wide,

flat, of medium texture, glabrous, rough above, smooth beneath; racemes 2–4, erect, 5–7 cm. long, the rachis 1.5–2 mm. wide; spikelets in pairs, but little convex on one side, often so crowded as to appear as if in 4 rows, 3 mm. long and about 1.5 mm. wide, elliptic, the first scale wanting, the second and third scales 3-nerved, densely appressed-pubescent, the fruiting scale yellowish, slightly convex in cross-section.

TYPE LOCALITY: Texas.
DISTRIBUTION: Texas and Mexico.

56. **Paspalum tenellum** Willd. Enum. Hort. Berol. 89. 1809.

Paspalum Liebmanni Fourn. Mex. Pl. Gram. 11. 1881.
Paspalum tenellum Bourgaei Fourn. Mex. Pl. Gram. 12. 1881.
?*Paspalum Virletii* Fourn. Mex. Pl. Gram. 12. 1881.

Stems up to 1 m. tall, glabrous, simple; leaf-sheaths papillose-hirsute; blades up to 2 dm. long, 1–2 cm. wide, lanceolate, flat, papillose-hirsute; racemes 5–10, rarely more, ascending or erect, 2–8 cm. long, the lower ones sometimes stalked, the rachis about 1 mm. wide; spikelets in pairs, 2 mm. long, 1–1.2 mm. wide, elliptic to obovate, pubescent with spreading hairs, the first scale wanting, the second commonly 5-nerved, the third 3-nerved, the fruiting scale yellowish, smooth and shining.

TYPE LOCALITY: Described from a plant from the Paris Garden.
DISTRIBUTION: Southern Mexico.

57. **Paspalum pubiflorum** Rupr.; (Galeotti, Bull. Acad. Brux. 9[2]: 237, hyponym. 1842) Fourn. Mex. Pl. Gram. 11. 1881.

Paspalum pubiflorum viride Fourn. Mex. Pl. Gram. 11. 1881.
Paspalum Hallii Vasey & Scribn. Bull. Torrey Club **13**: 165, as synonym. 1886.
Paspalum pubiflorum glaucum Scribn.; Vasey, Contr. U. S. Nat. Herb. **3**: 19. 1892.
Paspalum paucispicatum Vasey, Contr. U. S. Nat. Herb. **1**: 281. 1893.

A stout glabrous perennial, usually rooting at the lower nodes, with flat leaf-blades and pubescent spikelets. Stems 4–10 dm. long; leaf-sheaths more or less hirsute on the margin, the exterior basal ones hirsute all over; blades 3 dm. long or less and 1–1.5 cm. wide, glabrous on both surfaces; racemes 2–4, usually ascending, the lower ones 5–10 cm. long; spikelets in pairs, 2.5–3 mm. long, about 2 mm. broad, broadly obovate, the first scale wanting, the second and third scales 3-nerved, the second scale strongly hirsute, the third glabrous, the fruiting scale yellowish-white.

TYPE LOCALITY: Tehuacan de las Granadas, Puebla.
DISTRIBUTION: Louisiana to Costa Rica.

58. **Paspalum geminum** Nash, Bull. N. Y. Bot. Gard. **1**:434. 1900.

Paspalum remotum glabrum Vasey, Bull. Torrey Club **13**: 166. 1886.
Paspalum pubiflorum glabrum Vasey; Scribn. Bull. Tenn. Exp. Sta. **7**: 32. 1894.
Paspalum laeviglume Scribn.; Nash, in Small, Fl. SE. U. S. 75. 1903.

A stout glabrous tufted perennial, the stems later usually rooting at the lower nodes, with flat or folded leaf-blades and glabrous spikelets. Stems 5–15 dm. long; leaf-sheaths more or less hirsute on the margins, otherwise glabrous; blades 1–4 dm. long, 8–20 mm. wide, linear, glabrous on both surfaces, sometimes sparingly ciliate, flat or folded; racemes 3–8, spreading or ascending, the lower ones 4–10 cm. long; spikelets in pairs, 2.7–3 mm. long, 1.8–2 mm. broad, oval to broadly obovate, glabrous, the first scale wanting, the second 3–5-nerved, the third 5–7-nerved, the fruiting scale yellowish-white.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: Maryland to Oklahoma, and south to Florida and Texas.
ILLUSTRATION: Bull. Tenn. Exp. Sta. **7**: *f. 18.*

59. **Paspalum portoricense** Nash, Bull. Torrey Club **30**: 377. 1903.

A low tufted nearly glabrous slender perennial. Stems about 1 dm. tall, simple, glabrous, with the exception of a few hairs at the nodes; leaf-sheaths glabrous, usually shorter than the internodes and blades; blades 2–6 cm. long, 3–5 mm. wide, linear, acuminate, usually more

or less narrowed toward the base, ascending, flat, rather thin, the upper surface with some long hairs at the very base and a few scattered ones elsewhere, sparingly ciliate, the lower surface glabrous; racemes 1 or 2, slender, erect, about 2 cm. long; spikelets in pairs, elliptic, 1.8 mm. long and 0.7 mm., wide, usually purplish-tinged, glabrous, the first scale wanting, the second and third scales 3-nerved, the fruiting scale greenish-white, a little shorter than the outer scales, obtuse.

TYPE LOCALITY: Between Aibonito and Cayay, Porto Rico.
DISTRIBUTION: Known only from the type locality.

60. **Paspalum maculatum** Nash, sp. nov.

Stems tufted, up to 4 dm. tall, slender, sometimes branched below, glabrous; leaf-sheaths glabrous or sparingly hirsute; blades up to 1.5 dm. long, 1–2 mm. wide, erect, glabrous, usually folded; racemes 2–4, curved, 2–4 cm. long, the rachis about 0.25 mm. wide; spikelets in pairs, 0.8 mm. long, 0.5 mm. wide, obovate, glabrous, the first scale wanting, the second 3-nerved, a little shorter than the spikelet, the third scale 5-nerved, as long as the spikelet, the apex black-tipped, the fruiting scale yellowish, strongly papillate longitudinally.

Type collected on the savannas of Boruca, Costa Rica, November, 1891, *Pittier 4474* (herb. John Donnell Smith, in herb. U. S. Dep. Agr.).
DISTRIBUTION: Known only from the type locality.

61. **Paspalum microstachyum** J. Presl, in Presl, Rel. Haenk. 1: 215. 1830.

Stems up to 1 m. tall, erect or ascending, with leafless flower-bearing branches from the upper axils; leaf-sheaths glabrous or pubescent; blades up to 2.5 dm. long, 2.5 cm. wide, long-acuminate, the basal and those on the lower part of the stem long-attenuate at the base, passing by a broader base into the upper ones which are deeply cordate-clasping and lanceolate, all flat, glabrous or sparingly hirsute, often ciliate; racemes numerous, occasionally only 8–10, spreading, slender, often curved, the larger up to 8 cm. long, the rachis about 0.7 mm. wide; spikelets in pairs, 1.5 mm. long and about 0.7 mm. wide, pubescent, one on a short pedicel, the other on a pedicel about as long as itself, the first scale wanting, the second and third scales 5-nerved, the fruiting scale yellowish, smooth.

TYPE LOCALITY: Not indicated.
DISTRIBUTION: Guatemala to Costa Rica; also in Colombia.

62. **Paspalum caespitosum** Flügge, Gram. Monog. 161. 1810.

Paspalum gracile Poir. in Lam. Encyc. Suppl. 4: 313. 1816. Not *P. gracile* Rudge, 1805.
Paspalum heterophyllum Poir. in Lam. Encyc. Suppl. 4: 315. 1816.
Paspalum Poiretii R. & S. Syst. Veg. 2: 878. 1817.
Paspalum lanceaefolium Desv. Opusc. 58. 1831.
? *Paspalum Richardi* Steud. Syn. Gram. 17. 1854.
Paspalum Blodgettii Chapm. Fl. S. U. S. 571. 1860.
Paspalum caespitosum longifolium Vasey, Bull. Torrey Club 13: 164. 1886.

A slender tufted perennial, with flat glabrous leaf-blades and pubescent spikelets. Stems 3–6 dm. tall, slender; leaf-sheaths smooth and glabrous; blades 5–20 cm. long, 3–7 mm. wide, narrowed at both ends, linear, erect or nearly so, flat, glabrous; racemes 2–6, erect, 1.5–5 cm. long, slender, the rachis about 0.5 mm. wide; spikelets in pairs, 1.5–1.8 mm. long and about 0.8 mm. wide, elliptic, the first scale wanting, the second and third scales sparsely papillose-pubescent with appressed hairs, 3-nerved, the fruiting scale yellowish-white.

TYPE LOCALITY: Hispaniola.
DISTRIBUTION: Southern Florida and Bahamas to Jamaica, Cuba, Hispaniola, and Porto Rico.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 332*; Trin. Ic. *pl. 121.*

63. **Paspalum Helleri** Nash, Bull. Torrey Club 30: 376. 1903.

Paspalum elatum Nash, in Small, Fl. SE. U. S. 73. 1903. Not *P. elatum* Rich. 1877.

A tufted perennial. Stems up to 8 dm. tall, often with leafless flower-bearing branches from the upper axils, smooth and glabrous; sheaths smooth and glabrous; blades up to 3 dm. long, 5–8 mm. wide, linear, often involute, smooth and glabrous, or with a few long hairs on the upper surface just back of the ligule; racemes 2–6, rarely single on the branches, slender, 6–13 cm. long, the rachis about 1 mm. wide; spikelets in pairs, 1.5–2 mm. long, 0.8–1.3

mm. wide, elliptic, obtuse, the first scale wanting, the second and third scales 3-nerved, the second pubescent with long weak hairs, the third glabrous, the fruiting scale greenish.

TYPE LOCALITY: Santurce, Porto Rico.
DISTRIBUTION: Southern Florida; Bahamas to Cuba and Grenada.

64. **Paspalum glabrum** Poir. in Lam. Encyc. **5**: 30. 1804.

Paspalum milioideum Desv.; Poir. in Lam. Encyc. Suppl. **4**: 315. 1816.
? *Paspalum cubense* Spreng. Neue Entdeck. **3**: 12. 1822.
Paspalum miliare Spreng. Syst. **1**: 247. 1825.
? *Paspalum sinuosum* Desv. Opusc. 57. 1831.
Paspalum Bakeri Hack. Inf. An. Estac. Centr. Agron. Cuba **1**: 410. 1906.

A tufted glabrous perennial. Stems tufted, up to 1 m. tall, sometimes with a leafless flower-bearing branch from the upper axil; leaves strongly striate; sheaths with a tuft of hairs at the apex; blades up to 4 dm. long, 5–7 mm. wide, flat, or more often involute; racemes 2–4, 5–10 cm. long, erect or ascending, the rachis about 0.7 mm. wide; spikelets in pairs, 1.8–2.2 mm. long, 1–1.2 mm. wide, elliptic, glabrous, the first scale wanting, the second 5-nerved, the third usually 3-nerved, the fruiting scale yellowish, smooth.

TYPE LOCALITY: Porto Rico.
DISTRIBUTION: Bahamas to Cuba, Hispaniola, and Porto Rico.

65. **Paspalum mandiocanum** Trin. Gram. Pan. 113. 1826.

Stems tufted, simple, up to 8 dm. tall, glabrous; sheaths glabrous, or sometimes ciliate; blades up to 2 dm. long and 2.5 cm. wide, flat, elliptic, narrowed at both ends, ciliate, the surfaces glabrous or sparingly hirsute; racemes 3–7, 3–7 cm. long, ascending, the rachis less than 1 mm. wide; spikelets in pairs, 2.25–2.5 mm. long, 1–1.25 mm. wide, elliptic, obtuse, appressed-pubescent, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Southern Mexico to Panama; also in Brazil.
ILLUSTRATION: Trin. Ic. *pl. 154*.

66. **Paspalum Simpsoni** Nash, Bull. Torrey Club **24**: 39. 1897.

Paspalum gracillimum Nash, in Small, Fl. SE. U. S. 73. 1903.

A tufted perennial, with flat leaf-blades and glandular-pubescent spikelets. Stems erect, slender, up to 1 m. tall, sometimes with leafless flower-bearing branches from the upper axil; leaf-sheaths loosely embracing the stem, those at the base short and appressed-villous; blades 2 dm. long or less, 2–15 mm. wide, erect or ascending, flat, lanceolate or linear-lanceolate, sometimes rounded or slightly cordate at the base, acuminate at the apex, somewhat glaucous above, glabrous on both surfaces, often ciliate; racemes 3–15, spreading or ascending, 2–8 cm. long, the rachis less than 1 mm. wide; spikelets in pairs, obovate, 1.2–1.5 mm. long and 0.8–1 mm. wide, the first scale wanting, the second and third scales 3-nerved, the second scale pubescent with short spreading glandular-tipped hairs, the third glabrous or pubescent, the fruiting scale yellowish, smooth.

TYPE LOCALITY: No Name Key, Florida.
DISTRIBUTION: Southern Florida and Bahamas to Cuba, Grand Cayman, and Jamaica.

67. **Paspalum lentiginosum** J. Presl, in Presl, Rel. Haenk. **1**: 218. 1830.

Stems tufted, erect, up to 1 m. tall, glabrous, simple; sheaths glabrous or softly pubescent; blades up to 2.5 dm. long and 2 cm. wide, glabrous or pubescent on the surface, ciliate, linear to linear-lanceolate; racemes 5–12, spreading or ascending, 2.5–7 cm. long, straight or curved, the rachis about 1 mm. wide; spikelets 1.1–1.3 mm. long, 0.8–1 mm. wide, broadly obovate to oval, densely pubescent with spreading glandular-tipped hairs, the first scale wanting, the second 3-nerved, the third usually 2-nerved by the suppression of the midnerve, the fruiting scale yellowish, nearly orbicular.

TYPE LOCALITY: Mexico.
DISTRIBUTION: Mexico.
ILLUSTRATION: Field Columb. Mus. Publ. Bot. **3**: 28, *f.*

68. **Paspalum elatum** Rich.; Doell, in Mart. Fl. Bras. **2**^{2}: 78. 1877.

Stems up to 1 m. tall and more, simple, glabrous; leaf-sheaths glabrous, the lower ones crowded and reticulate; blades up to 3 dm. long, 5–7 mm. wide, glabrous, with a ring of long hairs just back of the ligule; racemes 5–7, erect or nearly so, 4–6 cm. long, the rachis about 1.5 mm. wide; spikelets 2.5 mm. long and 1.2 mm. wide, glabrous, the first scale wanting, the second 3-nerved, the third 5-nerved, the fruiting scale deep-brown, smooth.

TYPE LOCALITY: French Guiana.
DISTRIBUTION: Cuba; also in French Guiana.

69. **Paspalum scrobiculatum** L. Mant. 29. 1767.

A tufted smooth and glabrous perennial, with flat leaf-blades and glabrous spikelets. Stems 2–6 dm. tall, sometimes branched; leaf-sheaths compressed; blades 2 dm. long or less, 2–8 mm. wide, linear, erect, or nearly so, flat, of medium texture; racemes 2–5, 2–7 cm. long, the rachis 1.5–2 mm. wide; spikelets singly disposed, 2–2.5 mm. long and 1.5–1.75 mm. wide, oval, glabrous, the first scale wanting, the second and third scales 5-nerved, the lateral nerves approximate and distant from the midnerve, the fruiting scale deep seal-brown at maturity.

TYPE LOCALITY: East Indies.
DISTRIBUTION; Florida; tropics of the Old World.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 331;* Trin. Ic. *pl. 143.*

70. **Paspalum convexum** Flügge, Gram. Monog. 175. 1810.

Paspalum hemicryptum Wright; Sauv. Anal. Acad. Ci. Habana 8: 204. 1871.
Paspalum pauperculum Fourn. Mex. Pl. Gram. 10. 1881.
Paspalum pauperculum altius Fourn. Mex. Pl. Gram. 10. 1881.
Paspalum inops Vasey, Contr. U. S. Nat. Herb. 1: 281. 1893.
Paspalum inops major Vasey; Beal, Grasses N. Am. 2: 89. 1896.

Stems up to 6 dm. tall, glabrous; leaf-sheaths glabrous or papillose-hirsute; blades up to 2 dm. long and 1 cm. wide, papillose-hirsute, rarely glabrous; racemes 2 or 3, rarely 1, ascending or erect, 2–4 cm. long; spikelets circular, strongly convex, 2–3 mm. in diameter, glabrous, the first scale wanting, the second and third scales 5-nerved, the fruiting scale very convex, smooth and shining, deep-brown.

TYPE LOCALITY: Jorullo, Michoacan.
DISTRIBUTION: Mexico to Costa Rica; Cuba.

71. **Paspalum plicatulum** Michx. Fl. Bor. Am. **1**: 45. 1803.

Paspalum undulatum Poir. in Lam. Encyc. 5: 29. 1804.
Paspalum plicatum Pers. Syn. Pl. 1: 86. 1805.
Paspalum gracile Le Conte, Jour. de Phys. 91: 284. 1820. Not *P. gracile* Rudge, 1805.
Paspalum lepton Schultes, in R. & S. Syst. Veg. Mant. 2: 173. 1824.
Paspalum tenue Kunth, Rév. Gram. 26. 1829.
Paspalum antillense Husnot, Bull. Soc. Linn. Norm. II. 5: 260. 1870.

A glabrous tufted perennial, with erect usually folded leaf-blades, and somewhat pubescent spikelets. Stems flattened, 4–8 dm. tall; leaf-sheaths compressed, smooth and glabrous; blades 2 dm. long or less, 2–5 mm. wide, usually folded, at least when dry, more or less long-hairy above, erect, rather stiff; racemes 3–7, rarely fewer, spreading or ascending, 3–7 cm. long, the rachis about 1 mm. wide; spikelets in pairs, 2.5–3 mm. long, rarely smaller, and 1.3–1.8 mm. wide, obovate to elliptic, the first scale wanting, the second 5-nerved, with approximate lateral nerves, usually pubescent with appressed hairs, the third scale glabrous, 3-nerved, the margins usually more or less transversely plicate, the fruiting scale seal-brown at maturity.

TYPE LOCALITY: Georgia.
DISTRIBUTION: Georgia and Florida to Texas and Mexico, and in tropical America.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 7: *f. 28;* Trin. Ic. *pl. 140.*

72. **Paspalum Boscianum** Flügge, Gram. Monog. 170. 1810.

Paspalum virgatum Walt. Fl. Car. 75. 1788. Not *P. virgatum* L. 1759.
Paspalum brunneum Bosc; Flügge, Gram. Monog. 171, as synonym. 1810.
Paspalum purpurascens Ell. Bot. S. C. & Ga. 1: 108. 1816.
? *Paspalum compressum* Raf. Fl. Ludov. 15. 1817.
Paspalum confertum Le Conte, Jour. de Phys. 91: 285. 1820.

A rather stout glabrous perennial with compressed stems, which often root at the lower nodes, flat leaf-blades and glabrous spikelets. Stems often branched, 5–12 dm. long; leaf-sheaths compressed, glabrous or the basal ones papillose-hirsute; blades 3 dm. long or less, 3–10 mm. wide, linear, flat, of medium texture, smooth or roughish, papillose-hirsute above near the base, otherwise glabrous; racemes 2–13, spreading or ascending, 4–9 cm. long, the rachis straight, 2–2.5 mm. wide; spikelets in pairs and often so crowded as to appear in 4 rows, red-brown, 2–2.3 mm. long, 1.5–1.8 mm. wide, broadly obovoid, glabrous, the first scale wanting, the second 5-nerved, the third 3-nerved, the fruiting scale deep-brown at maturity.

TYPE LOCALITY: [South] Carolina.
DISTRIBUTION: Virginia and Tennessee to Florida and Texas; Porto Rico.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 327*; Bull. Tenn. Exp. Sta. 7: *f. 17*; Ell Bot. S. C. & Ga. *pl. 6, f. 3.*

73. **Paspalum paniculatum** L. Syst. Nat. ed. 10. 855. 1759.

Paspalum hemisphaericum Poir. in Lam. Encyc. 5: 31. 1804.
?*Paspalum strictum* Pers. Syn. Pl. 1: 86. 1805.
Paspalum compressicaule Raddi, Agrost. Bras. 29. 1823.
Paspalum multispicum Steud. Syn. Gram. 18. 1854.
Paspalum cognatissimum Steud. Syn. Gram. 18. 1854.
Paspalum paniculatum rigidum Schlecht.; Fourn. Mex. Pl. Gram. 9. 1881.
Paspalum affine Bello, Anal. Soc. Esp. Hist. Nat. 12: 125. 1883.
Paspalum paniculatum minus Scribn. Field Columb. Mus. Publ. Bot. 2: 24. 1900.

Stems up to 1 m. tall or more, smooth and glabrous, simple, the nodes usually barbed; leaf-sheaths glabrous or papillose-hispid; blades up to 3 dm. long and 2.5 cm. wide, long-acuminate at the apex, rounded or subcordate at the base, glabrous or papillose-hispid; racemes numerous, rarely less than 15, crowded, spreading or ascending, often curved, 3–10 cm. long, the rachis less than 0.5 mm. wide; spikelets in pairs, 1–1.5 mm. long, 0.8–1 mm. wide, broadly obovate to oval or nearly orbicular, pubescent, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish-green, oval, smooth and shining.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Jamaica and Cuba to Grenada; Mexico to Panama; also in tropical South America.
ILLUSTRATIONS: Gaertn. Fruct. *pl. 80*; Trin. Ic. *pl. 127.*

74. **Paspalum squamulatum** Fourn. Mex. Pl. Gram. 11. 1881.

Paspalum Sumichrasti Fourn. Mex. Pl. Gram. 11. 1881.

Stems 3–6 dm. long or more, prostrate at the base and often rooting at the lower nodes, glabrous; leaf-sheaths glabrous or sparingly hirsute, ciliate; blades up to 12 cm. long and 1.5 cm. wide, lanceolate, softly pubescent on both surfaces, or sometimes glabrous above and sparingly pubescent below and ciliate; racemes normally 3–10, spreading or ascending, 2–4 cm. long, the rachis about 0.5 mm. wide, often with a few scattered weak hairs; spikelets in pairs, 1.5–1.7 mm. long, about 1.3 mm. wide, broadly oval, glabrous, strongly convex, the first scale wanting, the second and third scales 3-nerved, the second markedly shorter than the third, the third equaling the fruiting scale, which is smooth and shining, yellowish-white, and nearly orbicular.

TYPE LOCALITY: Chinantla, Oaxaca.
DISTRIBUTION: Southern Mexico to Costa Rica.

75. **Paspalum densum** Poir. in Lam. Encyc. 5: 32. 1804.

Stems up to 1 m. tall, stout, simple; leaf-sheaths glabrous, the lower and basal ones markedly reticulate; blades up to 8 dm. long, 1–1.5 cm. wide, glabrous, rough on the margins, flat, or the lower often folded; panicle 1–2 dm. long, dense, the numerous branches ascending or erect, up to 8 cm. long, the rachis 1–1.2 mm. wide, setiferous; spikelets 1.7–1.9 mm. long, 1.5–1.7 mm. wide, glabrous, flat, yellowish, the first scale wanting, the second and third scales 3-nerved, the fruiting scale nearly orbicular, only slightly convex on one side, prominently marked with papillae in longitudinal rows.

TYPE LOCALITY: Porto Rico.
DISTRIBUTION: Cuba; Porto Rico; Guadeloupe; also in tropical South America.
ILLUSTRATION: Trin. Ic. *pl. 122.*

76. **Paspalum Schreberianum** (Flügge) Nash, sp. nov.

Paspalum virgatum Schreberianum Flügge, Gram. Monog. 190. 1810.

Stems tufted, up to 1 m. tall or more, glabrous, simple; leaf-sheaths glabrous, except the ciliate margin; blades up to 7 dm. long and 12 mm. wide, linear, long-acuminate, glabrous, smooth, rough on the margins; racemes commonly 10–15, rarely fewer, erect or ascending, up to 1.5 dm. long, the rachis 1.25–1.5 mm. wide, glabrous; spikelets in pairs, 2.3–2.7 mm. long, 1.5–1.7 mm. wide, glabrous, elliptic to obovate, the first scale wanting, the second 5-nerved, the lateral nerves approximate and close to the margin, the third scale about as long as the first, 3-nerved, the fruiting scale yellowish, oval, about as long as the other scales.

TYPE LOCALITY: South America.
DISTRIBUTION: West Indies; also in South America.

77. **Paspalum Underwoodii** Nash, Bull. Torrey Club **30**: 375. 1903.

? *Paspalum millegranum* Schrad.; Schultes, in R. & S. Syst. Veg. Mant. 2: 175. 1824.

A tall perennial with reticulate sheaths, elongate blades, and a dense panicle. Stems erect, up to 12 dm. tall; leaf-sheaths glabrous, the basal ones strongly reticulate, rather abruptly narrowed into the blade, equitant; blades up to 7 dm. long and 1 cm. wide, rough on the lower surface, hirsute on the upper; panicle up to 2.5 dm. long; racemes 12–18, ascending or nearly erect, up to 10 cm. long, the rachis about 1 mm. wide and usually setiferous; spikelets in pairs, 2–2.5 mm. long, about 2 mm. broad, broadly obovate, yellowish-green, usually tinged with purple, glabrous, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish-white, oval.

TYPE LOCALITY: Along roadsides, Mayagüez to Joyna, Porto Rico.
DISTRIBUTION: Jamaica and Cuba to Barbados.

78. **Paspalum conspersum** Schrad.; Schultes, in R. & S. Syst. Veg. Mant. 2: 174. 1824.

Paspalum virgatum conspersum Doell, in Mart. Fl. Bras. 2^2: 89. 1877.
? *Paspalum cordovense* Fourn. Mex. Pl. Gram. 9. 1881.
Paspalum Hartwegianum Fourn. Mex. Pl. Gram. 12. 1881.

Stems up to 1.5 m. tall or more, stout, glabrous, simple; lower leaf-sheaths papillose-hispid, the upper ones usually glabrous; blades up to 5 dm. long, the larger 2–3 cm. wide, flat, rough on the margins, glabrous on the surface or hispid near the base; panicle up to 2.5 dm. long, dense, the numerous racemes ascending or erect, the lower sometimes recurved, up to 1 dm. long, the rachis 0.5–0.7 mm. wide, sometimes setiferous; spikelets in pairs, 2–2.5 mm. long, 1.5–1.7 mm. wide, elliptic to obovate, the first scale wanting, the second and third scales 3-nerved, the second scale appressed-pubescent, long-ciliate, the third scale glabrous, sometimes sparsely ciliate, the fruiting scale yellowish-green, elliptic, obtuse, minutely roughened.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Southern Mexico and Guatemala; also in Brazil.

79. **Paspalum virgatum** L. Syst. Nat. ed. 10. 855. 1759.

? *Paspalum latifolium* Spreng. Syst. 1: 248. 1825.
? *Paspalum platyphyllum* Schultes, in R. & S. Syst. Veg. Mant. 3: 557. 1827.
Paspalum leucocheilum Wright; Sauv. Anal. Acad. Ci. Habana 8: 203. 1871.

Stems up to 1 m. tall or more, simple, stout, glabrous; leaf-sheaths glabrous, the lower ones prominently reticulate; blades up to 5 dm. long and 3 cm. wide, linear, smooth and glabrous; racemes 10 or more, erect or ascending, up to 1.5 dm. long, the rachis 1.25–1.5 mm. wide, commonly setiferous; spikelets 2.3–2.5 mm. long, 1.6–2 mm. wide, elliptic, broadly obovate to nearly orbicular, the first scale wanting, the second and third scales ciliate toward the apex, glabrous on the surface or sometimes appressed-pubescent, the second scale 5-nerved, the third 3-nerved, the fruiting scale becoming brown at maturity, prominently marked with papillae in longitudinal rows.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Southern Mexico to Costa Rica; Jamaica and Cuba to Grenada; also in tropical South America.
ILLUSTRATIONS: Trin. Ic. *pl. 131, 132*; Gaertn. Fruct. *pl. 80*.

80. **Paspalum Larrañagai** Arech. Anal. Mus. Nac. Montevid. **1**: 68. 1894.

Paspalum virgatum pubiflorum Vasey, Bull. Torrey Club 13: 167. 1886. Not *P. pubiflorum* Rupr. 1881.
Paspalum Vaseyanum Scribn. Bull. U. S. Dep. Agr. Agrost. 17: 32. 1899.

A tufted perennial with flat nearly glabrous leaf-blades and long-hairy pointed spikelets. Stems 1–1.5 m. tall, stout; lower leaf-sheaths densely papillose-hispid with ascending hairs; blades 4 dm. long or less, 8–12 mm. wide, hirsute above at the very base, otherwise glabrous; racemes erect, 10–20, the lower 8–12 cm. long, the rachis less than 1 mm. wide; spikelets in pairs, acute, 2.3–2.5 mm. long and about 1.4 mm. wide, the first scale wanting, the second and third scales 3-nerved, acute, pilose on the margins with very long hairs, the surface, especially that of the second scale, pubescent with shorter hairs, the fruiting scale yellowish-white.

TYPE LOCALITY: In low wet grounds in vineyards, Salto, Uruguay.
DISTRIBUTION: South Carolina to Alabama and Texas; Guatemala; also in South America.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. 17: *f. 328*; Anal. Mus. Nac. Montevid. 1: 69.

81. **Paspalum dilatatum** Poir. in Lam. Encyc. **5**: 35. 1804.

Paspalum platense Spreng. Syst. 1: 247. 1825.
Paspalum ovatum Nees; Trin. Gram. Pan. 113. 1826.
Paspalum eriophorum Schultes, in R. & S. Syst. Veg. Mant. 3: 560. 1827.
Paspalum lanatum Spreng. Syst. 4: Cur. Post. 30. 1827. Not *P. lanatum* H.B.K. 1815.
Paspalum dilatatum decumbens Vasey, Bull. Torrey Club 13: 166. 1886.

A smooth and glabrous perennial, with flat leaf-blades and acute ciliate spikelets. Stems 5–17 dm. tall, somewhat compressed; leaf-sheaths compressed, glabrous; blades 3 dm. long or less, 3–12 mm. wide; racemes 3–8, 5–10 cm. long, erect or ascending, the rachis 1.2–1.5 mm. wide, straight; spikelets in pairs, so densely crowded that they appear as if in four rows, 3–3.5 mm. long, 2–2.2 mm. wide, nearly orbicular, acute, the first scale wanting, the second and third scales 5–7-nerved, the second scale ciliate with very long lax hairs, the third sparingly ciliate with much shorter hairs, the fruiting scale orbicular, white at maturity.

TYPE LOCALITY: Buenos Aires, Argentina.
DISTRIBUTION: Virginia and Tennessee to Florida and Central America; also in South America.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. *pl. 2*; ed. 2. *pl. 5*; Bull. U. S. Dep. Agr. Agrost. 7: *f. 31*; Bull. U. S. Dep. Agr. Bot. 3: *pl. 1*; Bull. Tenn. Exp. Sta. 5: *f. 37*; 7: *f. 19*; Britt. & Brown, Ill. Fl. *f. 230*; Kunth, Rév. Gram. *pl. 10*; Trin. Ic. *pl. 139*.

82. **Paspalum difforme** Le Conte, Jour. de Phys. **91**: 284. 1820.

A perennial sometimes glaucous grass with short flat leaf-blades and large glabrous spikelets. Stems 5–8 dm. tall; leaf-sheaths rather loosely embracing the stem, the uppermost one usually bladeless or with a mere rudiment, generally shorter than the internodes, glabrous, or the outer basal ones sometimes pubescent; blades usually less than 1.5 dm. long, less than 1 cm. wide, linear to linear-lanceolate, acuminate, erect or ascending, flat, thickish, both surfaces glabrous, or the upper pubescent with long hairs, especially near the base, the hairs arising from papillae; racemes usually 2, sometimes 1 or 3, rarely 4, erect or ascending, less than 1 dm. long, usually 4–8 cm., rather stout, the rachis often flexuous and about 1 mm. wide; spikelets usually singly disposed, sometimes in pairs, 3–4 mm. long and 2.5–3 mm. wide, oval, the first scale wanting, the second and third scales 3-nerved, the fruiting scale brownish when mature.

TYPE LOCALITY: Georgia.
DISTRIBUTION: New Jersey to Florida, and west to Texas.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. 7: *f. 29*.

83. **Paspalum floridanum** Michx. Fl. Bor. Am. **1**: 44. 1803.

Paspalum macrospermum Flügge, Gram. Monog. 172. 1810.
Paspalum glabrum Bosc; Flügge, Gram. Monog. 173, as synonym. 1810.
Paspalum arundinaceum Poir. in Lam. Encyc. Suppl. 4: 310. 1816.
Paspalum altissimum Le Conte, Jour. de Phys. 91: 285. 1820.
Paspalum floridanum typicum Vasey, Bull. Torrey Club 13: 166. 1886.
Paspalum floridanum glabratum Engelm.; Vasey, Bull. Torrey Club 13: 166. 1886.
Paspalum glabratum C. Mohr, Bull. Torrey Club 24: 21. 1897.

A glabrous or hirsute, sometimes glaucous, tall perennial with long blades and glabrous spikelets. Stems up to 2 m. tall, smooth and glabrous, simple; leaf-sheaths glabrous or hirsute with long ascending hairs which arise from papillae; blades erect or nearly so, the larger ones 3–7 dm. long, 5–15 mm. wide, linear, acuminate, flat, rather firm, glabrous or hirsute with long hairs; racemes 2–6, erect or nearly so, the lower ones commonly 8–15 cm. long, the rachis about 1.5 mm. wide, sometimes bearing scattered long hairs; spikelets singly disposed or in pairs, 3.5–4.5 mm. long, 2.5–3.5 mm. wide, oval, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish.

TYPE LOCALITY: Florida.
DISTRIBUTION: Delaware to southern Kansas, and south to Florida and Texas.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **7**: *f. 30*; Bull. Tenn. Exp. Sta. **7**: *f. 20*; Britt. & Brown, Ill. Fl. *f. 235*; Beal, Grasses N. Am. **2**: *f. 22*.

84. **Paspalum giganteum** Baldw.; Vasey, Bull. Torrey Club **13**: 166. 1886.

A tall glabrous tufted perennial, with long flat broad leaf-blades, long spreading racemes, and glabrous spikelets. Stems exceeding 1 m. in height; leaf-sheaths rather loosely embracing the stem and commonly overlapping; blades erect or ascending, the lower ones 3–5 dm. long and 1.5 to more than 2 cm. wide, linear, acuminate, flat, glabrous, or with a few hairs on the upper surface near the very base, rarely sparingly ciliate with short hairs; racemes commonly 3, sometimes 2 or 4, finally widely spreading, 1–2 dm. long, the rachis often flexuous and about 1.5 mm. wide; spikelets disposed in pairs, rarely single, 3–3.5 mm. long and 2.25–2.75 mm. wide, oval, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish at maturity.

TYPE LOCALITY: Not indicated.
DISTRIBUTION: Florida.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 333*.

85. **Paspalum longicilium** Nash, Bull. N. Y. Bot. Gard. **1**: 435. 1900.

A tufted stout perennial with erect leaf-blades, spreading racemes, and glabrous spikelets. Stems 6–12 dm. tall, erect, clothed with the overlapping leaf-sheaths, the lower strongly hirsute with long hairs, the upper more sparingly so and ciliate on the margins; blades erect, the lower 3–5 dm. long, and about 1.5 cm. wide, acuminate at the apex, narrowed toward the base, smooth and glabrous on both surfaces, ciliate on the margins with hairs 3–4 mm. long; racemes 3 or 4, about 1.5 dm. long, the rachis about two thirds as wide as the spikelets; spikelets singly disposed, rarely in pairs at the end of the racemes, 3.25–3.5 mm. long and about 2.5 mm. wide, oval, the first scale wanting, the second and third scales 5-nerved, the lateral nerves approximate at the fold, the fruiting scale yellowish-white.

TYPE LOCALITY: Eustis, Lake County, Florida.
DISTRIBUTION: Florida.

86. **Paspalum monostachyum** Vasey; Chapm. Fl. S. U. S. ed. 2. 665. 1883.

Paspalum rectum longispicatum Vasey, Bot. Gaz. **9**: 54. 1884.
Paspalum solitarium Nash, in Small, Fl. SE. U. S. 77. 1903.

A tall perennial with long and stout scaly rootstocks, the scales glabrous, stout stolons, erect rigid stems, and glabrous spikelets. Stems single, rigid, 6–12 dm. tall, sometimes shorter; leaf-sheaths glabrous, or sometimes pubescent on the margin; blades elongate, the larger ones often 3–6 dm. long, long-acuminate, rigid, involute, at least when dry, glabrous; racemes single, or rarely in 2's, 1–2 dm. long, the rachis rounded on the back, less than 1 mm. wide; spikelets crowded, 3 mm. long and about 1.5 mm. wide, in pairs on hispid pedicels, elliptic, the first scale wanting, the second and third scales 3-nerved, the fruiting scale yellowish, smooth.

TYPE LOCALITY: Southern Florida.
DISTRIBUTION: Southern Florida and Texas.
ILLUSTRATION: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 335*.

87. **Paspalum pilosum** Lam. Tab. Encyc. **1**: 175. 1791.

Panicum monostachyum H.B.K. Nov. Gen. & Sp. 1: 96. 1815. Not *Paspalum monostachyum* Vasey, 1884.
Dimorphostachys monostachya Fourn. Mex. Pl. Gram. 14. 1881.

Stems up to 7 dm. tall, sometimes branching at the base, often with leafless flower-bearing branches from the uppermost axil; leaf-sheaths ciliate, hispid at the apex, otherwise glabrous; blades up to 2 dm. long, 3–6 mm. wide, flat, linear, long-acuminate, papillose-hispid on both surfaces and also often pubescent with shorter soft hairs, the midnerve very prominent on the lower surface; raceme 1, or sometimes 2, 6–10 cm. long, usually curved, the rachis about 1 mm. wide, usually setiferous; spikelets in pairs, 2.2–2.8 mm. long, 1.3–1.6 mm. wide, elliptic to obovate, the first scale of the lower spikelet half as long as the spikelet, acute, the corresponding scale of the upper spikelet less than one fourth as long as the spikelet, sometimes rudimentary or wanting, the second and third scales 5-nerved, the fruiting scale yellowish, roughened with manifest papillae.

TYPE LOCALITY: Tropical America.
DISTRIBUTION: Costa Rica; also in tropical South America.
ILLUSTRATION: Kunth, Rév. Gram. *pl. 104*.

88. **Paspalum unispicatum** (Scribn. & Merr.) Nash.

Panicum unispicatum Scribn. & Merr. Bull. U. S. Dep. Agr. Agrost. **24**: 14. 1901.

A perennial with long scaly rootstocks and stolons. Stems up to 1 m. tall, glabrous, branching below, with leafless flower-bearing branches from the uppermost axil; leaf-sheaths glabrous to papillose-hirsute, ciliate; blades up to 3 dm. long, 6–12 mm. wide, linear, long-acuminate, often ciliate, papillose-hirsute on both surfaces or rarely glabrous; raceme 1, or rarely 2, straight or curved, up to 1.5 dm. long, the rachis about 1 mm. wide, glabrous; spikelets in pairs, glabrous, 2.5–4 mm. long, 1.4–2 mm. wide, elliptic, the first scale of the lower spikelet acute, as long as the spikelet or nearly so, or sometimes short and truncate, apiculate, the corresponding scale of the upper spikelet much shorter, usually obtuse, or rarely rudimentary or wanting, the second and third scales 3-nerved, or if 5-nerved, the lateral nerves approximate and the internerves differing much in width, the fruiting scale yellowish, roughened with manifest papillae.

TYPE LOCALITY: Valley of Oaxaca, Oaxaca.
DISTRIBUTION: Texas; Mexico; Cuba.

89. **Paspalum bifidum** (Bertol.) Nash, Bull. Torrey Club **24**: 192. 1897.

Panicum floridanum Trin. Mém. Acad. St. Petersb. VI. **3**[2]: 248. 1834. Not *Paspalum floridanum* Michx. 1803.
Panicum bifidum Bertol. Mem. Accad. Bologna **2**: 598. 1850.
Panicum alabamense Trin.; Steud. Syn. Gram. 64. 1854.
Paspalum racemulosum Nutt.; Chapm. Fl. S. U. S. 571. 1860.
Paspalum interruptum Wood, Class Book ed. 1861. 783. 1861.
Paspalum racemosum Beal, Grasses N. Am. **2**: 87. 1896. Not *P. racemosum* Lam. 1791.

A glaucous perennial with stout scaly rootstocks, the scales appressed-hirsute, flat leaf-blades, and glabrous spikelets. Stems 7–13 dm. tall, single; leaves mostly at the base of the stem; sheaths, at least the external basal ones, papillose-hirsute; blades 3 dm. long or less, generally 5–10 mm. wide, narrowed at both ends, glabrous or but sparingly hirsute beneath, strongly hirsute above toward the base; racemes usually 2 or 3, sometimes more or only 1, 7–15 cm. long, erect, the rachis triangular, slender, the lateral margins not winged; spikelets in rather distant pairs, oval, 3.5–4 mm. long and about 2.5 mm. wide, the first scale wanting, or sometimes present but small or rudimentary, the second scale 7-nerved, the third scale 5-nerved, the fruiting scale yellowish, minutely roughened.

TYPE LOCALITY: Alabama.
DISTRIBUTION: South Carolina to Florida, and west to Texas.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Agrost. **17**: *f. 334*; Mem. Accad. Bologna **2**: *pl. 41*, *f. 2*.

90. **Paspalum fimbriatum** H.B.K. Nov. Gen. & Sp. **1**: 93. 1815.

Stems tufted, up to 7 dm. tall, glabrous, often branched below; leaf-sheaths papillose-hirsute, or sometimes glabrous; blades up to 2.5 dm. long and 1.5 cm. wide, flat, linear, acute, ciliate,

otherwise glabrous, or rarely sparingly hirsute on the surface; racemes 2–6, erect or ascending, 2.5–7 cm. long, the rachis 1–1.5 mm. wide; spikelets normally in pairs, sometimes single, orbicular or nearly so, 2.5–3.5 mm. long, the first scale wanting, the second and third scales papillose, 3-nerved, the second scale with a broad wing, cut, cleft or parted into divisions which are ciliate with stout hairs, the third scale with a similar wing which is usually incomplete, or sometimes wingless, the fruiting scale roughened with papillae, 7-ridged.

TYPE LOCALITY: Ibagué, Colombia.
DISTRIBUTION: West Indies; Costa Rica; also in tropical South America.
ILLUSTRATION: H.B.K. Nov. Gen. & Sp. *pl. 28.*

91. **Paspalum orbiculatum** Poir. in Lam. Encyc. **5**: 32. 1804.

Paspalum pusillum Vent.; Flügge, Gram. Monog. 100. 1810.
? *Paspalum rhizomatosum* Steud. Syn. Gram. 17. 1854.
Paspalum geniculatum Steud. Syn. Gram. 18. 1854.
Paspalum Lenormandi Husnot, Bull. Soc. Linn. Norm. II. **5**: 259. 1870.

Stems extensively creeping and branching, the branches up to 3 dm. long; leaf-sheaths ciliate, otherwise glabrous; blades up to 6 cm. long, 4–8 mm. wide, lanceolate to linear-lanceolate, flat, glabrous; racemes 3–8, rarely 2, ascending, 1–2 cm. long, the rachis about 0.5 mm. wide; spikelets singly disposed, about 1 mm. long and 0.6 mm. wide, oval, glabrous, the first scale wanting, the second and third scales 2-nerved by the suppression of the midnerve, rarely 3-nerved, the fruiting scale brown at maturity.

TYPE LOCALITY: Porto Rico.
DISTRIBUTION: Porto Rico to Barbados; Guatemala to Panama; also in tropical South America.
ILLUSTRATIONS: Kunth, Rév. Gram. *pl. 208;* Trin. Ic. *pl. 273.*

92. **Paspalum conjugatum** Berg. Acta Helv. **7**: 129. 1772.

Paspalum tenue Gaertn. Fruct. **2**: 2. 1791.
Paspalum ciliatum Lam. Tab. Encyc. **1**: 175. 1791.
Paspalum Renggeri Steud. Syn. Gram. 17. 1854.
Paspalum Sieberianum Steud. Syn. Gram. 17. 1854.
Paspalum longissimum Hochst.; Steud. Syn. Gram. 19. 1854.

A glabrous plant with compressed stems which are finally decumbent at the base and rooted at the lower nodes, flat leaf-blades, slender racemes, and ciliate spikelets. Stems 2–9 dm. long; leaf-sheaths compressed, glabrous; blades 4–16 cm. long, 4–12 mm. wide; racemes in pairs, arising from the apex of the stem, slender, often curved, spreading or ascending, 5–12 cm. long, the rachis straight or flexuous toward the apex, 0.6–0.8 mm. wide; spikelets crowded, 1.5 mm. long and 1–1.2 mm. wide, apiculate, the first scale wanting, the second and third scales 2-nerved, the nerves marginal, the second scale ciliate on the margins with long lax hairs, the fruiting scale smooth and white.

TYPE LOCALITY: Surinam.
DISTRIBUTION: Florida to Mexico, and south to Panama; Bermuda; West Indies; and throughout tropical regions.
ILLUSTRATIONS: Gaertn. Fruct. *pl. 80;* Beauv. Fl. Oware *pl. 92, f. 2;* Trin. Ic. *pl. 102;* Acta Helv. **7**: *pl. 8.*

93. **Paspalum multicaule** Poir. in Lam. Encyc. Suppl. **4**: 309. 1816.

Paspalum papillosum Spreng. Nov. Prov. Hal. 47. 1819.
Paspalum Pittieri Hack. Oesterr. Bot. Zeits. **51**: 233. 1901.

Stems tufted, up to 4 dm. tall, glabrous, branched below; leaf-sheaths hirsute; blades up to 1 dm. long, 2–3 mm. wide, hirsute, erect; racemes in conjugate pairs, spreading or ascending, 1.5–5 cm. long, the flexuous rachis about 0.5 mm. wide; spikelets singly disposed, 1–1.3 mm. long, 0.8–1.1 mm. wide, orbicular or nearly so, the first scale wanting, the second and third scales 3-nerved, or the second 2-nerved by the suppression of the midnerve, one or both usually papillose, the fruiting scale yellowish.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Cuba; Costa Rica; also in Brazil.

94. **Paspalum clavuliferum** Wright; Sauv. Anal. Acad. Ci. Habana **8**: 203. 1871.

Paspalum Falcula Doell, in Mart. Fl. Bras. **2**^{2}: 60. 1877.
Paspalum Pittieri Hack.; Beal, Grasses N. Am. **2**: 88. 1896.

Stems tufted, up to 4 dm. tall, slender, glabrous, later with leafless flower-bearing branches from the uppermost axil; leaf-sheaths papillose-hispid or sometimes ciliate only; blades up to 1 dm. long, 2–3 mm. wide, flat, papillose-hispid, erect; racemes usually in conjugate pairs, or sometimes single, 2–5 cm. long, curved, 0.5 mm. wide or less; spikelets 1.2–1.5 mm. long, 0.8 mm. wide, obovate, commonly in pairs, the first scale wanting, the second and third scales 3-nerved, or the second sometimes 2-nerved by the suppression of the midnerve, the second scale pubescent with spreading glandular-tipped hairs, the third glabrous, the fruiting scale yellowish, strongly papillate longitudinally.

TYPE LOCALITY: Cuba.
DISTRIBUTION: Cuba; southern Mexico; also in Colombia.

95. **Paspalum notatum** Flügge, Gram. Monog. 106. 1810.

Stems tufted, up to 8 dm. tall, commonly less than 5 dm., glabrous, simple; leaf-sheaths usually ciliate, otherwise glabrous; blades up to 2.5 dm. long, commonly much shorter, 4–8 mm. wide, glabrous, or pubescent on the upper surface with short hairs; racemes conjugate, erect or ascending, up to 1 dm. long, usually shorter, the rachis about 1 mm. wide; spikelets singly disposed, 2.7–4 mm. long, 1.8–2.7 mm. wide, glabrous, oval, the first scale wanting, the second and third scales 3–5-nerved, the fruiting scale minutely roughened with longitudinal rows of papillae.

TYPE LOCALITY: St. Thomas.
DISTRIBUTION: Mexico to Costa Rica; Jamaica and Cuba to Grenada; also in tropical South America.
ILLUSTRATION: Trin. Ic. *pl. 114.*

96. **Paspalum minus** Fourn. Mex. Pl. Gram. 6. 1881.

Stems up to 4 dm. tall, commonly less than 3 dm., glabrous, simple; leaf-sheaths usually ciliate, otherwise glabrous; blades up to 1.5 dm. long, commonly shorter, 4–6 mm. wide, flat, glabrous, or sometimes pubescent above with short or very long hairs; racemes conjugate, erect or ascending, up to 6 cm. long, the rachis about 1 mm. wide; spikelets 2–2.5 mm. long, 1.5–1.7 mm. wide, oval, glabrous, the first scale wanting, the second and third scales 3–5-nerved, the fruiting scale minutely roughened with longitudinal rows of papillae.

TYPE LOCALITY: Cordoba, Vera Cruz.
DISTRIBUTION: Cuba and Jamaica; southern Mexico and Guatemala; also in Colombia.

97. **Paspalum distichum** L. Syst. Nat. ed. 10. 855. 1759.

Digitaria paspalodes Michx. Fl. Bor. Am. **1**: 46. 1803.
Paspalum Digitaria Poir. in Lam. Encyc. Suppl. **4**: 316. 1816.
Paspalum Michauxianum Kunth, Rév. Gram. 25. 1829.
Panicum polyrhizum J. Presl, in Presl, Rel. Haenk. **1**: 296. 1830.
? *Paspalum distachyon* Poit.; Trin. Mém. Acad. St. Petersb. VI. **3**^{2}: 142. 1834.
Paspalum Schaffneri Griseb.; Fourn. Mex. Pl. Gram. 6. 1881.

A perennial with long stout branched subterranean rootstocks, flat or involute leaf-blades, and pubescent spikelets. Stems 1–6 dm. tall; leaf-sheaths compressed, keeled, usually crowded and overlapping, especially at the base and on the innovations, glabrous or more or less hairy on the margins; blades commonly less than 1 dm. long, 3–6 mm. wide, usually glabrous; racemes terminal, in pairs at the apex of the stem, ascending, 2–5 cm. long, the rachis 1–1.5 mm. wide; spikelets singly disposed, ovate, 2.5–3 mm. long and 1–1.5 mm. wide, acute, the first scale wanting, or rarely present, the second and third scales firm, 5-nerved, or rarely 7-nerved, the second scale appressed-pubescent, the third scale glabrous, the fruiting scale apiculate, strongly pubescent at the apex, yellowish-white.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: New Jersey to Arizona, south to Florida and Mexico, and on the Pacific coast as far north as Washington; Bermuda; West Indies; continental tropical America.
ILLUSTRATIONS: Vasey, Agr. Grasses U. S. ed. 2. *pl. 7;* Bull. U. S. Dep. Agr. Agrost. **7**: *f. 25;* Bull. Tenn. Exp. Sta. **7**: *f. 24;* Britt. & Brown, Ill. Fl. *f. 229;* Rep. Comm. Agr. 1888: Bot. *pl. 2;* Sw. Obs. *pl. 2, f. 1.*

98. **Paspalum vaginatum** Sw. Prodr. 21. 1788.

Digitaria foliosa Lag. Gen. Sp. Pl. 4. 1816.
Paspalum tristachyum Le Conte, Jour. de Phys. 91: 285. 1820.
Digitaria tristachya Schultes, in R. & S. Syst. Veg. Mant. 2: 261. 1824.
Paspalum foliosum Kunth, Rév. Gram. 25. 1829.
Paspalum inflatum A. Rich. in Sagra, Hist. Cuba 11: 298. 1850.
Paspalum distichum vaginatum Sw.; Griseb. Fl. Brit. W. Ind. 541. 1864.
Paspalum reimarioides Chapm. Fl. S. U. S. ed. 2. 665. 1883.

A perennial with long stout branched rootstocks, flat or involute leaf-blades, and glabrous spikelets. Stems 2–6 dm. tall; leaf-sheaths compressed, keeled, usually crowded and overlapping, at least at the base and on the innovations, glabrous; blades 1.5 dm. long or less, 2–4 mm. wide, folded or involute when dry, glabrous, or sparingly hairy above at the very base; racemes terminal, usually in pairs at the apex of the stem, rarely more or single, erect or ascending, 3–7 cm. long, the rachis about 1 mm. wide; spikelets singly disposed, ovate-lanceolate, acute, 3–4 mm. long, the first scale wanting, or rarely present, the second and third scales thin, usually more or less wrinkled when dry, the second scale usually 4-nerved by the suppression of the midnerve, the lateral nerves approximate at the margin, the third scale 5-nerved, the lateral nerves rather near together, the fruiting scale sometimes with a few hairs at the apex.

TYPE LOCALITY: Jamaica.
DISTRIBUTION: Florida to Mexico; Bermuda; West Indies; also in tropical South America.
ILLUSTRATIONS: Rep. Comm. Agr. 1888: Bot. *pl. 1, f. 2*; Trin. Ic. *pl. 120.*

99. **Paspalum lineare** Trin. Gram. Pan. 99. 1826.

Stems tufted, up to 8 dm. tall, glabrous, simple, the nodes barbed; leaf-sheaths at the base of the stem very firm and thick, pubescent, or becoming glabrous, the upper sheaths glabrous or hirsute; blades up to 3 dm. long, folded, 1–2 mm. wide, glabrous or hirsute, strongly striate; racemes in pairs, conjugate, or sometimes separated by a short interval, sometimes stalked at the base, 3–6 cm. long, the rachis 0.5–1 mm. wide; spikelets singly disposed, 3.5–4.5 mm. long, about 1.8 mm. wide, oblong-elliptic, glabrous, the first scale wanting, the second and third scales 5–7-nerved, the fruiting scale yellowish-green, elliptic, roughened with longitudinal rows of papillae.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Cuba; Costa Rica; also in Brazil.
ILLUSTRATION: Trin. Ic. *pl. 111.*

100. **Paspalum fasciculatum** Willd.; Flügge, Gram. Monog. 69. 1810.

Stems stout, up to 1 m. tall or more, branched, glabrous; leaf-sheaths glabrous or ciliate; blades up to 6 dm. long and 2.5 cm. wide, glabrous; racemes numerous, rather crowded in a panicle, erect or ascending, up to 1 dm. long, the rachis 0.75–1.5 mm. wide; spikelets singly disposed, 3.5–5 mm. long, about 1.5 mm. wide, elliptic, acute, the first scale wanting, the second and third scales thin, ciliate, acute, usually 5-nerved, the third scale with the lateral nerves approximate, the fruiting scale a little shorter than the empty scales, elliptic, acute, yellowish.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Costa Rica and Panama; also in tropical South America.

101. **Paspalum erianthum** Nees; Trin. Gram. Pan. 121. 1826.

Stems tufted, up to 1 m. tall or more, glabrous, simple, the nodes barbed; leaf-sheaths glabrous, or the basal ones pubescent, the lower firm and thick; blades up to 2 dm. long, 8–14 mm. wide, glabrous or hirsute flat; racemes 4–8, 2–7 cm. long, erect or ascending, the rachis 0.7–1 mm. wide; spikelets 3.5–4 mm. long, 1.3–1.5 mm. wide, elliptic, the first scale wanting, the second and third scales, especially the second scale, pubescent with very long white hairs, the second scale 3–5-nerved, the third 3-nerved, the fruiting scale yellowish-green, elliptic, acute, minutely roughened, shining.

TYPE LOCALITY: Brazil.
DISTRIBUTION: Oaxaca to Panama; also in tropical South America.
ILLUSTRATION: Trin. Ic. *pl. 135.*

PARTS OF VOLUMES PREVIOUSLY PUBLISHED

3[1]: 1–88. Hypocreales : Nectriaceae, Hypocreaceae. Fimetariales : Chaetomiaceae, Fimetariaceae.

7[1]: 1–82. Ustilaginales : Ustilaginaceae, Tilletiaceae.

7[2]: 83–160. Uredinales : Coleosporiaceae, Uredinaceae, Aecidiaceae (pars).

7[3]: 161–268. (Uredinales:) Aecidiaceae (pars).

9[1]: 1–72. (Agaricales :) Polyporaceae (pars).

9[2]: 73–132. (Agaricales :) Polyporaceae (conclusio).

9[3]: 133–200. (Agaricales :) Boletaceae, Agaricaceae (pars).

16[1] : 1–88. Ophioglossales : Ophioglossaceae. Marattiales : Marattiaceae. Filicales : Osmundaceae, Ceratopteridaceae, Schizaeaceae, Gleicheniaceae, Cyatheaceae (pars).

17[1]: 1–98. Pandanales : Typhaceae, Sparganiaceae. Naiadales : Zannichelliaceae, Zosteraceae, Cymodoceaceae, Naiadaceae, Lilaeaceae. Alismales : Scheuchzeriaceae, Alismaceae, Butomaceae. Hydrocharitales : Elodeaceae, Hydrocharitaceae. Poales : Poaceae (pars).

22[1]: 1–80. Rosales : Podostemonaceae, Crassulaceae, Penthoraceae, Parnassiaceae.

22[2]: 81–192. (Rosales :) Saxifragaceae, Hydrangeaceae, Cunoniaceae, Iteaceae, Pterostemonaceae, Hamamelidaceae, Altingiaceae, Phyllonomaceae.

22[3]: 193–292. (Rosales :) Grossulariaceae, Platanaceae, Crossosomataceae, Connaraceae, Calycanthaceae, Rosaceae (pars).

22[4]: 293–388. (Rosales :) Rosaceae (pars).

25[1]: 1–88. Geraniales : Geraniaceae, Oxalidaceae, Erythroxylaceae, Linaceae.

25[2]: 89–171. (Geraniales :) Tropaeolaceae, Balsaminaceae, Limnanthaceae, Koeberliniaceae, Zygophyllaceae, Malpighiaceae.

25[3]: 173–261. (Geraniales :) Rutaceae, Surianaceae, Simaroubaceae, Burseraceae.

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